EXHIBIT B

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

IN RE: NATIONAL PRESCRIPTION OPIATE LITIGATION	)	MDL No. 2804
THIS DOCUMENT RELATES TO: "Case Track Seven"	)	Case No. 1:17-MD-2804
	)	Hon. Dan A. Polster

FRIDAY, JANUARY 6, 2023

HIGHLY CONFIDENTIAL - SUBJECT TO FURTHER CONFIDENTIALITY REVIEW

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Remote oral deposition of John Schneider, Ph.D., held at the location of the witness in Coral Gables, Florida, commencing at 9:27 a.m. Eastern Time, on the above date, before Carrie A. Campbell, Registered Diplomate Reporter, Certified Realtime Reporter, Illinois, California & Texas Certified Shorthand Reporter, Missouri, Kansas, Louisiana & New Jersey Certified Court Reporter.

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GOLKOW LITIGATION SERVICES
877.370.DEPS
deps@golkow.com

R E M O T E A P P E A R A N C E S :

MOTLEY RICE LLC
BY: LISA SALTZBURG
lsaltzburg@motleyrice.com
28 Bridgeside Boulevard
Charleston, South Carolina 29464
(843) 216-9000
Counsel for Plaintiffs

BOWLES RICE
BY: AARON C. BOONE
aboone@bowlesrice.com
GRAYSON O'SAILE
gosaile@bowlesrice.com
501 Avery Street, Fifth Floor
Parkersburg, West Virginia 26101
(304) 420-5501
Counsel for Kroger

ALSO PRESENT:
AMANDA UNTERREINER, paralegal, Motley Rice

TRIAL TECHNICIAN:
GINA VELDMAN,
Precision Trial Solutions

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EXHIBITS

COURT REPORTER: All parties to this deposition are appearing remotely and have agreed to the witness being sworn in remotely.

Due to the nature of remote reporting, please pause briefly before speaking.

All parties please state their appearance.

MS. SALTZBURG: This is Lisa Saltzburg, Motley Rice, for Montgomery County.

MR. BOONE: This is Aaron Boone with the law firm of Bowles Rice. Here with me is my counsel and co-counsel Grayson O'Saile. Also present is Kroger's expert, John Schneider.

JOHN SCHNEIDER, Ph.D.,

of lawful age, having been first duly sworn to tell the truth, the whole truth and nothing but the truth, deposes and says on behalf of the Plaintiffs, as follows:

DIRECT EXAMINATION

QUESTIONS BY MS. SALTZBURG:

Q. Good morning, Dr. Schneider. I know we met offline. I'm Lisa Saltzburg. I'm a lawyer with Motley Rice, which is the outside counsel assisting the prosecutor's office with this case.

A. Good morning.

Q. And you are based in Morristown, New Jersey, correct?

A. No, not -- in the past I have. I'm actually based now in Coral Gables, Florida.

Q. Okay. And is that where you plan to be, say, through the next year or so, too?

A. Correct.

Q. And you're in Miami today for the deposition, correct?

A. Actually, in Coral Gables, yeah.

Q. Fair enough.

A. It's basically -- we're surrounded by the City of Miami, so you're essentially correct.

Q. I get you. I live in a suburb, too.

And you've been deposed many times before, correct?

A. Correct.

Q. Okay. So you know all of the ground rules, and before we jump right in, I'll just go over a couple of things briefly.

If you need a break at any time, please let me know. I'll try to take a break about every hour, but if you want to break before then, just let me know, and the only thing I ask is if there's a question pending, go ahead and answer the question first.

A. Okay.

Q. We'll have to make sure not to try to talk over each other, and as you know, you'll want to check the natural tendency in conversation to nod your head, something like that, and make sure you're giving verbal answers so that the court reporter can take everything down.

Your lawyer might object from time to time. If that's the case, just give

him a minute to do that and then you can go ahead and answer unless he instructs you not to.

And if you didn't hear or didn't understand a question, please let me know. I can be soft spoken, so if that -- if you don't ask me, I'll assume that you've heard and understood.

Okay?

A. Okay.

Q. All right. Now, when you were deposed before, was it always as an expert or have you ever testified as a fact witness?

A. Honestly, as a layperson, I'm not sure I understand the difference. Can you explain the difference?

Q. Okay. Were you preparing a report in all the cases before?

A. When you say "all the cases," are you referring to opioid-related matters or just my entire career as an expert?

Q. Your career as an expert.

A. Generally, I -- I have prepared reports in my testimony. I would not say all the time, but most of the time.

Q. Okay. And did any of the cases in which you testified before involve opinions about causation?

A. Yes.

Q. Which cases were those?

A. I think off the top of my head one would be the tobacco product litter matter in the City of San Francisco. I testified as to the causes of tobacco product litter.

Q. And was that a lawsuit?

A. Correct.

Q. Okay. And did you testify at trial in that case or only in a deposition?

A. I'm not -- I don't remember exactly. I'm pretty sure it was only deposition. There could have been trial, too, in that. I just don't remember.

Q. Okay. And how many cases have you testified at trial?

A. Maybe a total of 10 or 12 over my career.

Q. Okay. And do those generally involve the reasonable value of medical bills?

A. They have involved a pretty wide range of things. Contract dispute, reasonable value as you mentioned. Things like -- well, I guess -- contract dispute as long as that's fairly broadly defined.

Q. Have you ever been excluded from testifying as an expert?

A. Yes. I think there were a couple times I was excluded, I believe both in the state of Mississippi, and it was regarding reasonable value cases.

Q. Okay. And was that only in Mississippi or somewhere else, too?

A. I think the exclusions that I recall were in Mississippi. I think I -- my testimony may have been limited in another case.

Q. And do you know why you were excluded there?

A. Yes, it was over a misunderstanding of the extent to which I was relying on collateral sources.

Q. And how many of your prior depositions have been in opioid-related cases?

A. Only two.
Q. Is that New Mexico and the Track 1 litigation?
A. Correct.
Q. Okay. Do you have any other depositions scheduled in opioid cases?
A. Not currently.
Q. And are you retained as an expert in other opioid cases?
A. Well, can you -- can you further explain what you mean by that?
Q. Sure.
Are you planning -- have you been retained to prepare an expert report in any other opioid cases?
A. Well, not different that this one, although I'm anticipating continuing to work for my current clients, yes.
Q. Okay. And when you say "this one," do you mean the Track 7 case in Montgomery County?
A. Correct.
Q. And who are your current clients?
A. My current clients in

Montgomery County, or do you mean just -- again --

Q. Not in your non-opioid cases, no. I realize that might take a long time. I'm only interested right now in your clients in the Track 7 case in Montgomery County.

A. Okay. My client in the Track 7 case in Montgomery County is only Kroger.

Q. Okay. So only Kroger.

And is it still true you're not doing any work in the bankruptcy proceedings for Insys, right?

A. No. No.

Q. Okay. Have you testified at trial in any opioid-related case?

A. No.

Q. And have you ever given any testimony before the FDA, CDC or DEA?

A. I'm sorry, can you repeat that?

Q. Sure.

Have you ever testified for the FDA, CDC or DEA?

A. I'm sorry, testified for them? I'm not --

Q. Before them.

A. No. No. I haven't.
Q. And did you receive a notice for this deposition?
A. Yes, I believe so.
Q. Okay. And did you get a box of documents?
A. The FedEx folder sitting in front of me. If that's what you're referring to, yes.
Q. It is, yes.
And did you open it?
A. No, not yet.
Q. Okay. Good for you. This would be a good time to do that.
A. All right.
(Schneider Exhibit 1 marked for identification.)
QUESTIONS BY MS. SALTZBURG:
Q. And so while you're opening that, I'll just tell you the first folder in there, folder 1, should be the deposition notice that you received. And this would be a good time to mark that as an exhibit.
A. Okay. Exhibit 1 notice? That?
Q. Yes.

A. Is that what you want me to open? You want me to not open anything else, correct?

Q. Correct.

MR. BOONE: John, are there two sets there?

MS. SALTZBURG: Yeah, there should be a set for your counsel.

THE WITNESS: Okay. There we go. Okay. So I've got now four folders. One of which is --

MS. SALTZBURG: I forgot that yours and Mr. Boone's were in the same box.

THE WITNESS: Okay. I just want to make sure there's nothing else in there. Nothing else in the folder. So you want me to open Exhibit 1, notice?

MS. SALTZBURG: Yes.

THE WITNESS: Okay.

QUESTIONS BY MS. SALTZBURG:

Q. And all I'm going to ask you about this notice is this is the notice that you received?

A. Yes.

Q. Okay. And we can put that away now.

What did you do to prepare for this deposition today?

A. I met with Mr. Boone and Mr. O'Saile.

Q. Was there anybody else present?

A. Yes. Ms. Kara Kapke. Am I pronouncing her last name right? If anyone knows. I'm not sure how -- if I'm pronouncing her last name correctly, but she represents Publix.

Q. Okay. She represents Publix.

And is Publix also a client of yours?

A. Yes.

So just to clarify, when you asked me before who my client is in the Mo Co. matter, it is Kroger. However, I have continued to do work for other retail pharmacies as well, including Publix.

Q. Okay. And is the work for the other retail pharmacies for other opioid cases in the MDL?

A. Well, I would say more generally it is in anticipation of me possibly being used in future matters, hence their continued involvement.

Q. Okay. I just wanted to make sure I understand.

So as you sit here today, are you retained in any of what we call the Tracks 8 through 11 cases?

A. Well, what I meant to say is I don't know whether I am or not or whether I will be or not.

Q. Okay. And how long was that meeting?

A. I think probably roughly five hours.

Q. And when was that?

A. That was yesterday.

Q. And did you look at any documents?

A. I looked at my report. No.

Q. And, Dr. Schneider, how did you come to be a testifying expert?

A. That's a good question. I think probably -- you'll have to -- you mean

originally for the first -- starting with the first time that I became a testifying expert?

Q. Right.

A. Okay. I was a -- on the faculty at the University of Iowa in Iowa City, Iowa, and I was contacted by an attorney working in a trademark infringement case, and they needed some -- they needed an economist to opine or to analyze and opine on market boundaries for hospitals in their system versus the system -- or the opposing system with whom they had a dispute.

Q. How did you come to be an expert witness for Kroger?

A. For Kroger I have -- that sort of kickoff expert testimony story I just gave you. In the years since then, I continued to add more types of cases to the -- to the work that I did, mainly while I was still in academia.

And then I went into consulting, primarily consulting, sort of continued doing litigation work, and somewhere along the way I met Mr. Boone in that work. And we worked on one case, and

then he contacted -- years had gone by and then he contacted me again regarding the opioid matter.

Q. Okay. And when did he contact you about being an expert in the opioid matter?

A. I don't remember the exact date, but would have been in -- sometime in, I want to say, maybe early 2021.

Q. Okay. And I guess really where I want to go here, is when were you approached about being an expert witness in this case?

A. Okay. Again, sorry just to clarify, you mean the --

Q. Track 7?

A. Montgomery County, Track 7 matter.

Q. Yes. I realize I shouldn't have interrupted you, but, yes.

A. Let me think. I would say probably, I want to say, maybe the middle of last year. So mid-2022.

Q. Okay. And when you were approached in the Montgomery County case,

what were you being retained to do?

A. Well, at that time I was being retained to conduct analysis of liability. For lack of a better word, liability was explained to me that the case would likely -- at that time it was believed that the case would likely be bifurcated and that I would start with liability.

Q. Anything specific with -- well, let me ask you a better question.

What do you mean by liability?

A. Well, that's why I said for lack of a better term. In the field of economics, liability is usually employed when you're talking about externalities, who is responsible for an externality. So in economics we use the term liability, but we more often use the term responsible parties.

So my approach to liability is twofold. One is -- as an economist, one is identifying contributing factors, and the second would be mapping those contributing factors into responsible parties.

Q. Okay. Are you opining that liability for economics is the same as

liability for litigation?

A. No, I'm not. Mainly because as an economist, and the methodology and the theory that I bring in for economics doesn't provide a very nuanced definition of liability. So -- and given that that's where all of my training is, I do not have a very nuanced understanding of liability. My understanding is only from the perspective of an economist.

Q. Okay. And do you have an understanding of what the purpose of your assignment was for the Montgomery County case?

A. Yes.

Q. And what was that?

A. Well, as I said, it was to study aspects of liability and responsible parties associated with the increase in supply of prescription opioids.

Q. Okay. And were you provided with any assumptions to use for purposes of that work?

A. No.

Q. I know you mentioned one case.

Have you done any other expert work in connection with the Bowles Rice law firm apart from the opioid cases?

A. No.

Q. And what percentage of your income is derived from expert witness work versus other work?

A. Well, in my company, I'm paid a salary, so it's difficult to answer that question directly.

Q. Okay. So would the percentage be based on a percentage of your time then?

A. Yes, that's probably fair. Well, actually, no. Because I am paid a salary regardless of what I work on. So, yeah, so that -- that makes that question difficult to answer.

Q. Okay. Do you have an estimate at all or --

A. Yes. So as a company, about 25 percent of our -- 25, 30 -- 25 to 30 percent of our revenue, depending on the month, would be derived from any matter regarding litigation support, you know, economic -- law and economics. And then the

other 70 to 75 percent would be life sciences consulting and things like that.

So that's the best breakdown I could provide.

Q. And do you have any other employment outside of Avalon?

A. I am currently -- just small contract, you know, kind of one-off contract appointment. So currently I have an appointment at San Diego State University, the purposes of which is for a specific grant.

I recently had an appointment at Columbia University, also for a specific grant.

And that would be it. Those are employment agreements, but they're part-time -- time-limited appointments.

Q. I see.

And when you say appointment, what kind of work is it?

A. Participating in a research team on a -- on a -- two very specific projects. So Columbia University and San Diego State University were very different

projects.

Q. I see.

Okay. And you are the principal and CEO of Avalon, correct?

A. Correct.

Q. And are you still one of the owners or the main owner?

A. Yes.

Q. And are there still two other owners?

A. Correct.

Q. And have there been any significant changes to the work of Avalon Health Economics since your deposition in New Mexico?

A. No.

Q. And is it still the case that you don't own any stock in pharmaceutical distribution or pharmacy industry companies?

A. That is still the case.

Q. And since your deposition in New Mexico, have you done any speaking engagements on behalf of the pharmaceutical or the pharmacy industry?

A. No.

Q. And did you fully disclose any prior speaking engagements in that deposition?

A. I believe so.

Q. And have you ever done consulting work for pharmacies or distributors, apart from the expert work in the opioid cases?

A. Avalon Health Economics does consulting work. Some of its consulting work is done for pharmaceutical companies.

Q. What about pharmacies?

A. No.

Q. Wholesale distributors?

A. No.

Q. I think you told me, but I just want to make sure I understand.

What is the particular expertise that you consider yourself to bring to this case?

A. Well, I've done a -- well, first of all, as an economist, I -- what I was asked to do in this case was in the purview of economics. So I start with that as my background in economics.

And I'm also specialized in a subfield of economics called health economics, and that also is an area in which, you know, for example, a lot of the work done and studies of various aspects of opioids have been conducted by health economists.

And then further down below that would be specifically I've worked on this concept of attributable costs or attributable risk.

Q. Do you have an estimate of how many total hours you've spent to the -- on the Montgomery County case from the time that you were first approached about being an expert?

A. No, I would have to -- I would have to look back on the invoicing documents to try to figure that out.

Q. Okay. And did anyone help you with your report or your work in this case?

A. Yes.

Q. And who was that?

A. This is various staff at Avalon Health Economics who have helped me. Various people. Would you like me to provide their

names?

Q. Yes.

A. Ryan Bresnahan.

Q. Uh-huh.

A. Karen Beltran.

Q. Uh-huh.

A. Karen. Just a footnote on Karen. She's moved on to a different position. She's no longer at our company.

Q. Uh-huh.

A. Let's see. Who else might have? Amy Duren, D-u-r-e-n.

And then administrative support? Do you want to go to that level?

Q. No.

A. Okay.

Q. All right. For the other three, what did they do?

A. In various -- I would describe it broadly as research assistants. Various types of retrieving PDFs of published articles, compiling data and spreadsheets, things like that.

Q. And would you need to look at the invoices to estimate your time, too?

A. Yes.
Q. And you're charging or Avalon is charging $400 an hour for your time and $250 an hour for staff time, correct?
A. Correct.
Q. Okay. How did you come up with those numbers?
A. Well, we have a rate sheet, Avalon Health Economics has a rate sheet. Those particular numbers were -- however, were negotiated with the clients at the onset of the work.
Q. And are there any charges in the Montgomery County case that are not based on hourly work?
A. Can you clarify what you mean by that?
Q. Sure.
I guess like what I'm asking is, in terms of the amount that -- or that you're charging for your expert work in Montgomery County, is it all based on an hourly rate?
A. Yes.
Q. And do you apply that same rate

for trial testimony, too?

A. No, we had a higher rate for trial testimony or I have a higher rate for trial testimony.

Q. And what is that?

A. In this case, I believe it's $800 an hour.

MS. SALTZBURG: And just for your counsel, we request that to the extent there are any additional invoices in this case, that we be provided those in advance of trial.

(Schneider Exhibit 2 marked for identification.)

QUESTIONS BY MS. SALTZBURG:

Q. And if you will go back to your FedEx box, could you pull out Exhibit 2, please? And we can mark this as an exhibit while you're doing that.

A. Okay. I have it.

Q. You have it. Okay.

We do have your invoices, or actually, I should ask you, can you identify what this is?

A. Yes, this appears to be the

invoices that -- that we submitted to our client over the time period beginning in May of 2022 through November 2022.

Q. Looks like there's a summary in the first page and then the invoices are behind it?

A. Correct.

Q. And did you prepare those invoices and summary?

A. No, I did not.

Q. Who did?

A. It would be our administrative team.

Q. And are you able to testify that the information in this summary and invoices is correct?

A. Yes, I reviewed these materials before they were provided, and they appear to be correct to me.

Q. Okay. And if you discover any inaccuracies later, could you bring those to our attention through your counsel?

A. Yes.

Q. And do you have any invoices or time that you have yet to submit for payment?

A. Yes.

Q. Okay. Do you have a sense of how much that is?

A. No. I do not.

We typically submit invoices to our client at the end of each month, however, due to the holidays, we have not yet submitted or compiled or submitted the invoicing for what would be the month of December 2022.

Q. I see.

And I guess between this is dated December 12, 2022, correct?

A. Correct.

Q. So between December 12, 2022, and today, did you do anything other than the deposition that we are now in and the meeting yesterday?

A. Well, I did my own preparatory work.

Q. Okay.

A. Which would -- which I did. It was not part of yesterday. Yesterday was with counsel. I did some work prior to that just reviewing my report.

Q. Anything else?
A. I don't think so.
Q. Looking through this exhibit, I noticed that these invoices appear to be in a different format than the ones you had in the New Mexico case, correct?
A. No, I wasn't aware of that.
Q. Okay. Well, let me ask you, do your invoicing records usually show a breakdown of, say, the -- in the description of the hourly work and the date it was performed?
A. To some degree, yes. Not all -- not always. I wouldn't say they're always consistently presented in that format.
Q. Okay. One thing that's confusing me a little bit about this summary is if you look at the top, it says J. Schneider, Montgomery County T7 matter, correct?
A. Correct.
Q. And then you said Kroger is the client for Track 7, correct?
A. Correct.
Q. But you have a breakdown here

also for Albertsons, Meijer and Publix, correct?

A. Correct.

Q. Why is that included?

A. Okay. When we compiled this summary, we chose a start date of May because that was after the New Mexico matter was more or less -- had more or less ended. So we took our invoices straight through from May until November, which was the most recent one we had as of December 12th.

Now, what we -- what that meant -- the way we did this and I perhaps could have asked my secretary to have done it differently, but when we did this, we included all the work that we did between May and November, whether it had directly -- whether it was directly applicable to Montgomery County or not.

So you are correct, that the title is somewhat misleading in that this includes work that was not done specifically for Montgomery County.

Q. And do you have a way to tell what part of the work was specifically for

Montgomery County?

A. Unfortunately because of the way we tracked hours in this case, no, it would be difficult to do that.

Q. Okay. One question I have, too. You have a column that says "Kroger sampling" at the top?

A. Correct.

Q. And what is the sampling there?

A. Well, we're asked by Kroger counsel to conduct a sampling, apparently -- my -- I don't have a very deep understanding of the use of the sampling because all we were asked to do was to conduct -- to actually draw the sample, but apparently other defendants -- well, the defendants and the plaintiffs were agreeing upon a sampling strategy with a specific seed number, and so we were just executing that sample on a set of claims that we were provided.

Q. And was that for Montgomery County, or was that for something else?

A. Well, I actually don't know. We were given some claims and asked to do the sampling. And I presume it was for

Montgomery County, but I'm not 100 percent sure.

Q. Okay. You say you were given some claims. Can you explain to me what you mean by that?

A. Unfortunately, I don't have much more detail than that. I recall looking at it, and they appeared to be records of prescriptions that were filled at Kroger stores, and it was a large sample. I don't remember how many records were in the sample, but we were provided the sample and we were asked to -- we were provided a seed number and we were asked to draw a random sample from that.

Q. Okay. I think I understand.

Was this dispensing data from Kroger?

A. Yes, that's correct.

(Schneider Exhibit 3 marked for identification.)

QUESTIONS BY MS. SALTZBURG:

Q. Okay. We can put this away. I would like to talk about the materials that you reviewed for this case.

And to do that, let's take a look at your report. It should be -- if you can pull out Exhibit 3, please. And we can mark that while you're doing that.

A. Okay.

Q. And just for the record, can you identify this document?

A. Just going to quickly review it.

Q. Take all the time that you need.

A. Yes, this appears to be my report for Montgomery County.

Q. Okay. And your counsel have confirmed that the materials cited in this report constitute all of the materials that you considered in forming your opinions in this case, correct?

A. Correct.

Q. I guess a better way to ask that, is that correct?

A. That is correct.

Q. All right. And how did you select those materials?

A. Well, in the course of doing --

researching the objectives that I was addressing in this report, I conducted a variety of literature searches primarily in an online tool called PubMed which indexes medical literature. And I also consulted with economics materials from JSTOR, which is an economics indexing source. I had also consulted published materials in the form of books that -- that are publicly available, published books, you know, hardcover books, most of which I have on my shelf. Some of which were ordered specifically for this matter.

Q. And how did you select the materials that you reviewed?

A. Well, as an economist and a health economist, I know the landscape of source material, and the selection of materials is based on a review of everything that addresses the question that I'm asking, and then a further assessment of the quality of that material.

Q. And were any of the materials provided by counsel?

A. No.

Q. And did you do any independent outside research apart from the materials that are cited here?

A. Can you just explain a little more what you mean by that?

Q. Sure.

Other than what you just described, did you do any independent outside research?

A. No.

Q. And did you base your opinions on any sources other than those listed in your report?

A. No.

Q. Is there anything you felt like you needed to look at and you did not have the opportunity to do that?

A. No, not for the most part.

Q. What do you mean "for the most part"?

A. I mean, as an academic economist, I think we are kind of wired to -- always wanting to do more. It's just our nature being an academic researcher, and so that's why I say that, that added clause.

Q. Okay. And do you have a sense of how many hours you plan to spend working on the Track 7 case in the future?

A. No.

Q. Are you planning to be at the trial?

A. As far as I know, yes.

Q. And is there anything further you plan to do for Track 7 between now and the trial?

A. Can you tell me when the trial is scheduled for? Because I'm not sure how to answer that question.

Q. There's not any.

A. Well, then I may be asked to do additional work, but I have not been yet.

Q. Is there anything more you need to give your opinions in this case?

A. Again, you're talking about regarding the liability phase for Montgomery County?

Q. Uh-huh.

A. No.

Q. Okay. And how certain are you of the opinions offered in this case?

MR. BOONE: I'm sorry, what was that?

QUESTIONS BY MS. SALTZBURG:

Q. How certain are you of the opinions offered in this case?

A. Very certain.

Q. And do you have a file for the materials in this case?

A. Yes.

Q. And can you describe that?

A. The file contains the -- primarily the PDFs of the cited materials.

Q. You have a part 7 of your report here, which we'll get to later. You referenced a regression that you did, correct?

A. Correct.

Q. So I'm not an economist, but I assume you don't do the regression in your head, right?

A. Correct.

Q. There's got to be some kind of documentation or something like that that comes out of those?

A. There are regression results.

Q. And do you have those results?
A. I do. Not handy, but I do. They exist, yes.
MS. SALTZBURG: And we would request that those be provided.
MR. BOONE: Counsel, I note your request. Thank you.
QUESTIONS BY MS. SALTZBURG:
Q. And just since we don't have them right now, can you -- well, let's wait on that.
But do you know, in what do you have, do you have the coefficient estimates that you used?
A. You mean the resulting coefficient estimates?
Q. Yes.
A. I do not have them in front of me, no.
Q. Do you have them in your file?
A. They're in my file, yes.
Q. And do you have backup analysis in the file?
A. I'm sorry, can you repeat that?
Q. Do you have backup analysis in

the file?

A. Oh, what do you mean by backup analysis?

Q. So any sort of backup analysis that you did for the regression that you reference.

A. I would say no. Just partly because I'm not sure exactly what that would constitute.

I -- in my file there is a page of regression output regarding the rerunning of Dr. Cutler's regressions, controlling for endogeneity. So there's two sets of regression results. I believe that is all that is -- that is all that exists.

Q. Okay. So you have two sets of results.

Did you do any regression that you didn't include in the report?

A. No.

Q. Okay. And go to paragraph 1.2 of the report.

A. Okay.

Q. You mentioned here that you don't necessarily agree with all the

findings, methods or summary opinions in the materials that you cite, correct?

A. Correct.

Q. Okay. And how did you decide which parts of the materials you would rely on?

A. Well, the reason I included that statement was because some of the materials are relied on, certainly not all of them. Some of them included data analysis, but some of them also include opinions, either in the introductions or in the discussion sections.

And I just wanted to be careful to make it clear that in citing a document -- and as you know from my report, I cite a lot of documents. But in citing a document, I didn't want to imply that I agreed with everything in that citation.

Q. And is there a way to tell from the report which part you do agree with?

A. Well, yes, indirectly, one could look to see what I'm -- you know, for example, if I'm citing a number from a published study, then it is the reporting of

that number in the study that I'm interested in, not necessarily the author's opinions about opioids either, which, again, usually appear in the introduction or the discussion, sometimes in the conclusion section of those articles.

Q. Okay. So is it fair to say that if you're citing a document, you should understand that -- you're relying on it for the specific thing you're citing it for, not for anything else?

A. Exactly.

Q. Okay. And was there any materials or categories of materials that you can think of that you did agree with everything?

A. Probably not. I don't recall off the top of my head, but I -- it's -- just generally in my experience in being an academic economist and health economist, I don't -- it's rare that I agree with everything in a particular article. Sometimes, but it's rare.

Q. And apart from the sources that we discussed a little bit earlier, what

documents or materials did you have access to in preparing your report?

A. Those -- the materials we discussed. Also the reports by Dr. Cutler and Dr. Alexander, and the deposition transcripts for both of those experts as well.

Q. And did you review any of the deposition testimony other than those two transcripts?

A. I don't think so.

Q. Would you have cited it if you did?

A. Well, not necessarily, because I'm not sure that I cite the Cutler or Alexander deposition transcripts. I may have. I don't recall whether I did or not.

Q. Do you know if you reviewed any testimony from witnesses in Montgomery County?

A. From other witnesses other than Cutler and Alexander, is that what you're asking?

Q. Correct.

A. I'm quite sure that I did not.

Q. Okay. And did you review any documents produced by any party in the Montgomery County case?

A. Documents -- I'm sorry, could you just explain what you -- maybe give me an example.

Q. Yes.

So in litigation the parties exchange documents. Did you review any of those documents?

A. I don't think so.

Q. Maybe a way to explain is this, when a document is produced in the case it will have what we call a Bate stamp in the bottom right-hand corner, letters and a number.

Were any of the documents you reviewed stamped like that?

A. No.

Thank you for that clarification.

Q. All right. And did you review any data produced in the Montgomery County case?

A. Well, so if we could go back to

the sampling issue we were discussing before, would that count as data produced in the Montgomery County case?

Q. It would.

A. It would. Well, then, yes.

Q. Okay. And did you review that -- just for that -- for the sampling -- drawing the sample that we talked about earlier or for purposes of this report?

A. Just for the sampling.

Q. Okay. Any other data?

A. For this report, no.

Q. Okay. And have you reviewed the complaint in this case?

A. No.

Q. And just for clarity, did you review the reports of any experts in this case, other than Dr. Alexander and Dr. Cutler?

A. No.

Q. And for both of those experts, did you review all of the appendices and exhibits to those reports?

A. Yes.

Q. And did you select those

reports to review or were they provided by counsel?

A. They were provided by counsel.

Q. And how would you receive those reports? Electronic or copy?

A. Electronic.

Q. Do you know Dr. Cutler either personally or by reputation?

A. By reputation, yes.

Q. Okay. And how is that?

A. How do I know? I work -- used to work at a company called -- research company called the Center for Health Economics Research. It was located in Boston. Dr. Cutler had just joined, I believe, the Harvard faculty then. He could have been somewhere else in Boston, but he was in Boston. And I would see him at lectures and symposiums and things like that.

Q. And what about Dr. Alexander?

A. Dr. Alexander, I'm less familiar with. I know his name, but I'm not familiar with his work, nor have I ever met him or seen him present or anything.

Q. Okay. And when you say you

know his name, can you explain what you mean by that?

A. Well, in my field of health economics, we read a lot of materials. I've had employees leave and go to Johns Hopkins, enroll in programs and we have -- we interview doctoral students for potential positions at our company. Some of them come from Johns Hopkins and -- yeah. So we just see -- there's a lot of exposure when you're in the academic field that's as sort of -- health economics is not a huge field. It's a subfield within economics. So everyone tends to -- there's quite a bit of name recognition, especially among the academic-based -- well, Alexander is not a health economist, but he's one that opines on -- or writes on matters of health policy, quite a bit, in epidemiology and things like that, and we in health economics overlap quite a bit with those types of studies.

Q. Okay. And other than the -- well, actually, strike that. Let me ask you.

Did you ever have any discussion with experts for other defendants

in this case, apart from the pharmacies that were retained -- I guess let me ask it this way.

Do you know who the other experts retained by Kroger for Track 7 are?

A. I -- no, not -- not -- many of them I don't know. I believe, I'm not certain, that they have retained someone I know to help with determining market size, but as far as I know that wasn't an issue -- obviously not an issue in this matter and not anything I relied on in this report.

Q. So I'm guessing you did not have any discussion with those experts then?

A. Correct.

Q. Okay. And have you -- so for the Track 7, have you had any calls or meetings with lawyers representing anyone other than Kroger?

A. Yes.

Q. And who is that?

A. Well, the attorneys representing -- if you recall from the invoicing documents, the other pharmacy -- the other pharmacies whom I've been -- who

have retained me, that would be Albertsons, Meijer and Publix, have been occasionally involved in calls over the -- over that time period.

Q. Okay. Anyone other than those pharmacies?

A. No.

Q. And have you discussed your testimony in this case with anyone other than Kroger and its counsel and counsel for Publix at the one meeting?

A. Yes. There were some earlier phone calls in which some of the counsel for some of the other pharmacies were present.

Q. Okay. And that's the same calls that you were just talking about?

A. Well, just for clarity, distinguish -- distinguish those calls from yesterday's prep calls, is that what you mean?

Q. Yes.

A. Okay. That's correct, yes.

Q. Okay. But nothing other than that?

A. No.

Q. Okay. And do you plan to use any demonstratives at trial?

A. I have not considered that as of yet.

Q. Let's turn to your opinions in this case, and I guess before we do that, we've been going almost an hour. Would you like a break, or would you like to keep going?

A. I would like a -- I was about to say, I would like a break. It doesn't have to be a long one.

MS. SALTZBURG: All right. How long would you y'all like to take?

THE WITNESS: Five, ten minutes. 10 minutes, 15 minutes. I don't know. Whatever is customary.

MS. SALTZBURG: All right. You want to say ten or --

MR. BOONE: Let's go with ten and we'll reveal on our cameras when we're ready to go.

MS. SALTZBURG: Okay.

MR. BOONE: But thank you for that courtesy.

THE WITNESS: Thank you.

(Off the record at 10:25 a.m.)

QUESTIONS BY MS. SALTZBURG:

Q. All right. Dr. Schneider, if you could look at Exhibit 3, please.

A. I already opened it. Is that the report?

Q. Same one. Uh-huh. You should still have it.

A. Yes. I have it in front of me.

Q. All right. And there are no separate subject areas or subjects of testimony that you intend to give that are not outlined in this report, correct?

A. That is correct.

Q. And so is it fair to say that this report is a complete and final copy that sets forth all of your opinions and the basis for them?

A. I think generally, yes, unless anything else emerges between now and -- if I'm asked to testify at trial, that is correct.

Q. Okay. And when you say if anything else emerges, you mean any new

information or --

A. I honestly don't have much of an idea what that might be. But I'm assuming if I'm asked to look at something or do something, then I will do it.

Q. Okay. Have you realized any corrections that you needed to make to this report between December 12th and now?

A. I think I found some very minor typos here and there, but nothing substantive.

Q. Only typos?

A. Correct.

Q. If you later discover any inaccuracy that's not a typo, we ask that we be provided that in advance of trial.

A. Okay.

Q. Did you prepare any notes for purposes of this report?

A. No.

Q. Okay. What about an outline?

A. The report started as an outline, and then I just filled it in. So, no, there's no specific outline.

Q. All right. And it looks like

in the introduction, that first paragraph, 1.1, it lists objectives of the report, correct?

Is that intended as an outline of your opinions?

A. Yes.

Q. Okay. And if you'll go to Section 2, it's entitled "Background."

GINA VELDMAN: Lisa, could you help with pages?

MS. SALTZBURG: Yes, I can. Sorry. This one is going to be on page 3, and if you'll actually go all the way to page 6 there, there's a Figure 2.1.

QUESTIONS BY MS. SALTZBURG:

Q. Is this a figure you created?

A. Yes.

Q. Okay. And what does it show?

A. This shows total opioid prescriptions between 2010 and 2020.

Q. And is it based on CDC data?

A. I'm sorry, you said CDC data?

Q. Yes.

A. Yes, it is.

Q. Okay. And if you will jump right below it to paragraph 2.6 on that same page, referencing that figure, I think, you say that the climb in opioid prescriptions was precipitated primarily by two factors, correct?

A. Correct.

Q. Okay. And the factors you cite are changes in clinical guidelines and increased state and federal government oversight and monitoring such as through prescription data monitoring programs or PDMPs, correct?

A. Correct.

Q. Okay. And how did PDMPs affect supply?

A. Well, I think a number of different ways, both direct and indirect. So first directly a PDMP might limit the prescribing of an opioid, so that's going to -- this is the supply of prescription opioids that we're talking about, so PDMP could prevent an opioid from being prescribed, which would impact the supply.

Also, I would say perhaps more

on the indirect side, the physician may be much more circumspect in writing an opioid prescription knowing about the existence of PDMPs. In other words, he or she might be -- might write a prescription -- or might approach the writing of a prescription differently knowing about the existence of a PDMP.

Those are two things that come -- there are other factors, too, but those are probably the two most important ones.

Q. Okay. And for -- I guess let's go with the indirect one first.

When you say a prescription -- or, I'm sorry, a physician might look at it differently. Are you opining that physicians, in fact, did do that?

A. I don't know for a fact that physicians did that. As the chart shows, Figure 2.1, we know that the supply of opioid prescriptions declined consistently since 2012. We know that around that time there were a number of policies enacted that -- and guidelines as I cite here. Generally higher

level of awareness. There were also things that I -- that are not included in these two. These are -- I'm calling these primarily two factors. I believe there are other factors as well that contributed to this decline.

And I further am of the opinion that all of those factors worked synergistically. So it's difficult to disentangle the effects of each one.

Q. So you answered one question I was going to ask you, which is whether there were also other factors.

I want to stick to PDMPs for right now, and just follow up on what you were saying before about the impact of PDMPs.

How did PDMPs prevent opioids from being prescribed?

A. Well, a query to a PDMP system could identify a case that -- or a situation that would warrant further investigation into whether it's an appropriate prescription.

Q. And do you have an understanding of whether pharmacies are expected to check PDMPs?

A. Well, my understanding is that

they are expected to make use of PDMPs or interact with PDMPs, but I'm not sure exactly operationally how they do that.

Q. Okay. And operation site aside, would failure of pharmacies to check PDMPs affect supply?

A. So just repeating the question, you're asking would failure of pharmacies to check a PDMP affect supply?

I think you would have to say all other things equal. So there -- as I said before, there's so many different factors at play here. So the PDMP is not meant to be the sole -- the only tool to monitor the prescribing of opioids. This is sort of -- if you think of my report in reverse, you think about the things that contribute to an increase in opioids are all things that could also be utilized to either decrease the increase or affect a decrease.

So all of those things, you know, I say unfortunately -- only from a methodological point of view, unfortunately it's difficult -- it's not unfortunate that they exist. It's unfortunate for an

economist like me to disentangle the effects.

Q. Understood.

And I guess what I'm trying to understand is, is there a difference in your mind between a doctor checking a PDMP and a pharmacist checking a PDMP?

A. Is there a difference? Yes. Because it is the physician who is initiating the prescription, and I believe that it is much more incumbent on the physician, much more important for the physician, to check a PDMP.

Because, in a sense, the PDMP, you could think of -- as being kind of a little bit like a medical record. Not exactly. It's certainly not containing the level of information that's in a medical record. But if a PDMP indicates that, for example, that an individual filled a prescription somewhere else by another doctor at, you know, a time period not equal to the amount dispensed, whatever, then a physician should know that. A physician should know that they're dealing with someone who is exhibiting potentially drug-seeking behavior.

So I believe that if the responsibility were to fall solely on the pharmacies, then we're missing an enormous opportunity to -- for the physician to inform his or her treatment decisions based on that piece of information.

Q. I think you may be saying two different things. I'm not saying solely on pharmacies, but I guess my question is, are you also missing an opportunity if the pharmacy isn't checking the PDMP?

A. Yes, I think that pharmacies generally -- again, I'm not here to opine on pharmacy -- retail pharmacy operations, but a pharmacy in fulfilling its legal obligation to fill only legal prescriptions should perform the due diligence that it's required to perform. But, again, I think the physician is the one who is, you know, historically in the -- at least in the US health care industry, physicians are the ones who determine medical need, medical necessity, and that is -- I believe the primary responsibility falls on them.

Q. And when you say you believe

the primary responsibility is with them, are you relying on any documents or sources there? Or is that sort of your belief?

A. There's some reliance on -- it's part my experience, my 30-plus years working in this industry, but it's also -- there's specific articles, some of which I cite in this report, where physicians are specifically taking that responsibility. There's some opinions written by physicians saying you're the ones who should be the primary, I guess, gatekeeper, if you will, for opioid prescriptions or the prescriptions of anything that requires an additional level of oversight.

And, yeah, so it's not just me; it's the medical community as well.

Q. Okay. And that's the source cited in your report, correct?

A. Correct.

Q. And then if you go to the next paragraph, 2.7, it starts on that same page and go into the next.

It starts out "contributing factors," correct?

A. Yes.

Q. Okay. How do the seven factors that you identify in this paragraph relate to the two factors we just discussed?

A. Well, there's not a direct relationship between the two. So the two factors we just discussed are things that happened that affected either a slowing of the decrease -- I'm sorry, a slowing of the increase or an actual decrease. And what we're -- what I'm turning to here in this section are the contributing factors to the increase in opioid supply. It would be like -- like, for example, the sentence after note 16 that begins with "from an economic perspective." That sentence, "from an economic perspective, these drivers can be the ones that increase the supply of opioids or increase the demand for opioids." So that's the most succinct summary of what these factors do.

Q. So I just want to make sure I understand.

So are you saying there are different drivers for increases than for the

decrease that you just discussed?

A. Well, there's some overlap. I think the -- for example, the clinical -- let's start with the clinical practice guidelines.

Clinical practice guidelines, which are often drafted by medical societies, those were -- it was the -- essentially the same medical societies that were responsible for the increase in opioid supply back in maybe 20 years ago when they were strongly advocating for more aggressive pain management.

So those same factors that later changed were originally driving supply.

Q. Okay. So for the seven factors that you discussed, did you attempt to apportion the extent to which each factor was a contributor?

A. I'm sorry, could you repeat that?

Q. Sure.

So you identify seven factors as contributing to opioid supply, correct?

A. Correct.

MR. BOONE: Object to form.

THE WITNESS: Attributing to the increase in opioid supply, yes.

QUESTIONS BY MS. SALTZBURG:

Q. Okay. And let me ask it this way. Okay. When you were referencing the seven factors in paragraph 2.7, what are you opining they are causative drivers of?

A. I'm opining that they're creative drivers in the increase of opioid supply.

Q. And did you attempt to apportion the extent to which each factor was a contributor to the increase in supply?

A. No.

Q. Okay. Did you assign any particular weight to each factor?

A. No.

Q. Okay. Did you attempt to assess the significance of the causal role for each?

A. Yes. Via the literature.

Q. What do you mean by "via the literature"?

A. Well, I would say the main body

of my report, some of which is in this Section 2, some of which is in the next section and the one after that, cite to the evidence that these factors were important.

Q. Okay. And are there other contributing factors as well?

A. There might be other contributing factors that I have missed, but I believe these are the primary ones.

Q. Okay. And are you relying on any sources other than the literature you cite for determining that these are the primary ones?

A. No.

Q. All right. I want to make sure I understand something.

You mentioned and you talked a little bit about you prepared an expert report in New Mexico, correct?

A. Correct.

Q. And you had a list of eight factors in that report, correct?

A. I don't recall the details of that report, so if -- are you able to share it?

Q. I don't have it as an exhibit, and I was sort of wondering if you knew offhand why those lists would be different.

A. Not off the top of my head, I don't recall.

Q. Okay. And do you recall if you have a review of the cost studies in your report in New Mexico?

A. Yes. So the New Mexico report was a combination of both liability and abatement, and that might actually partially answer your previous question. That because that report involved an abatement component, there are some differences between that report and this report.

Q. Okay. And you're not offering any abatement opinions in this report, correct?

A. That's correct.

Q. Not trying to apportion any abatement costs, anything like that?

A. Correct.

Q. Okay. I think we can go earlier, actually, in the page, on page 5, paragraph 2.4.

And here I think you say you consider dosage units a preferred calculation to MMEs, correct?

A. For the purposes of my report that has an economic perspective, yes.

Q. Okay. And why is that?

A. For the three reasons that I list here.

Q. And what materials did you rely on for that opinion?

A. I relied on both my own experience with economic modeling around externalities combined with some literature, but primarily it was a judgment call on my part, but I would note -- as I note in one of these points here that the -- in most cases MMEs and the number of prescriptions are how they're correlated.

Q. And that was going to be my next question.

So do you have an issue with using either measure?

A. I don't have an issue with using either measure, that's correct.

Q. All right. And I'm going to

look at the seven factors you discussed. I'm going to try to save us some time here, because I think you testified about all seven these of factors in New Mexico, correct?

A. Yes, that's correct.

Q. Okay. And is that testimony equally applicable here?

A. Only in a very general sense. My testimony here has been enhanced and I've added some things to it. Again, only in a very general sense.

Q. Okay. That was going to be my next question.

Do you have any new or different opinions about these factors in this case?

A. I think so. Without the New Mexico report side-by-side here, I can't say with certainty, but I do believe that I have added more information, perhaps reorganized some of the information, and added some additional citations to this discussion.

Q. And that's in the report, correct?

A. All of those changes would be

reflected in this Montgomery County liability report, correct.

Q. Okay. And is everything that you said about these factors in New Mexico still your opinion for purposes of your testimony in Montgomery County?

A. I --

Q. Yeah, I'm trying to come up with a better way to get at what I think you're agreeing with but wanting to be careful about, and that is --

A. Yeah, I understand. And, like I said, I understand you're trying to save some time.

So let me just reiterate. Again, I'm not trying to be difficult. I'm just reiterating that the -- I had an opportunity to revisit these issues. I was not asked to revisit. In other words, I think I could have just produced the exact same material, because fundamentally I continue to agree with what I did in New Mexico.

However, I had an opportunity here to enhance it and to expand it, to make

it a little bit more, I guess, cohesive.

Q. I'll try to go through each factor, but in the interest of efficiency to -- rather than asking this question every time.

My understanding of the way your report is structured is that you have the paragraphs about each factor, and then the materials that you're relying on for your opinion about that factor are cited in footnotes to those paragraphs, correct?

A. Correct.

Q. There aren't different sources somewhere else?

A. Correct.

Q. That will save us some time. So if you'll go to page 8, please.

A. Okay.

Q. You have a factor that you reference as regulatory approval, correct?

A. Correct.

Q. Is there anything important that you feel like you need to explain about your opinion on this factor that you didn't already articulate in your New Mexico

deposition or in the report here?

A. Well, I believe this description in 2.8 is, again, without having both reports in front of me, I can't say for sure, but I believe this description is somewhat different.

Q. Okay.

A. And there might be some additional evidence cited.

Q. And in that case let me ask you, how -- what is your opinion as to how the FDA is a factor?

A. Well, the FDA is something as an a health economist I'm quite familiar with.

As I indicated earlier today, we do work for life sciences companies, device companies, diagnostic companies, and a lot of those -- obviously a lot of those companies have to interact with the FDA.

So I'm familiar with the rigor of the FDA approval process. And when the FDA approves a prescription drug, it is only after a fair amount of research and development on the part of the manufacturer

combined with assessment -- about a year-long assessment by the FDA itself. So when the FDA approves a prescription drug, the -- for better or for worse, the community accepts that drug. In other words, it's a stamp of approval.

So FDA approval, if it's not -- if the FDA misses something, the implications of that can be serious because they've given a drug a stamp of approval and all of the rest of the health care supply chain refers to or defers to that approval.

Q. And so are you opining that the FDA should not have approved opioids here?

A. No, I wouldn't say that. And the reason for that is twofold. One is it's true that 96 percent, approximately, of opioids are used as directed. Opioids have demonstrated clinical need. There's a large literature on that. So I wouldn't say that they -- that they shouldn't have approved it.

My opinion about the FDA is that they should have done a better job doing postmarket surveillance of adverse events associated with the utilization of

prescription opioids.

Q. And is -- okay. But you're not opining taking some opioids off the market based on that surveillance, correct?

A. Well, okay. So that introduces another layer. So when you say "some opioids," so I think there were some products that were particularly -- or had high risks associated with them and higher rates of adverse events associated with them. So in those cases they might have considered that. However, I'm not -- that's beyond my area of expertise.

Q. Okay. What are you opining the FDA should have done based on that postmarket surveillance?

A. Well, I think they should have done a better job of postmarket surveillance in terms of adverse events. They were in a position given the way that information is in the postmarket phase is filed with the FDA or expected to be filed with the FDA. Physicians are supposed to -- it's very easy for a physician to notify the FDA of things that they observe. I don't know the extent

to which any of that was happening, but I do know the end result was the FDA was very, very slow to move to do anything regarding opioids.

Q. Okay. Is there any specific action you are opining the FDA should have taken based on postmarket surveillance?

A. Well, I don't have an opinion about a specific action. Again, that's -- the regulation of prescription drugs is -- while it's something I'm familiar with, the specifics of it are probably outside the scope of my expertise.

Q. Okay. And then the next factor is medical need, correct, that you cite?

A. Correct.

Q. And what is your opinion about medical need?

A. Well, medical need is important to consider because there was some -- the timeline, it's important. So around the time that opioids were coming onto the market corresponded to two things that were happening in terms of medical need: One was the shift of care to the outpatient setting;

and the other was the -- well, as I say in my report, increased life expectancy and survival rates from treatment. Both of those, again, are -- it's well-documented that both of those factors were -- they would increase the need for prescription pain medication.

Q. Okay. And I have a question on page 9 about paragraph 2.10.

A. Okay.

Q. And that paragraph continues into page 10, which is the part I'm going to read from.

And you write that, "Opioid-based pain management helps meet this rising demand, even if a substantial proportion of physician opioid prescribing at discharge was subsequently found to be inappropriate or excessive."

Correct?

A. Correct.

Q. So are you including inappropriate or excessive prescriptions in medical need here?

A. Well, it's a -- it's a fine

distinction. Physicians faced a number -- considering all of these factors, I know we're just talking about medical need right now. But just focused on the medical need factors, but keeping in mind all the other ones that exist, physicians faced a lot of incentives, pressure, whatever word you want to use, to prescribe pain -- effective pain medication.

So my point in adding this clause was only to say that even if afterwards some of those were deemed to be inappropriate, in other words, a physician prescribing an opioid when they shouldn't have or a physician prescribing a pain medication when they shouldn't have, according to medical -- according to the world of medical necessity, which, again, I'm not an expert on.

So those would still be considered -- in my opinion, that's still considered a prescription written sort of in the name of medical need, even if it were later determined that it might have been inappropriate or excessive.

Q. Okay. I think you're sort of getting at my next question, which is, how are you defining medical need here?

A. Medical need is based on the judgment of a physician. So I'm describing, I guess, two different ways. One is there were structural changes in the industry that increased medical need. That would be survival from disease -- increased survival rates, life expectancy and shift to -- those are structural things.

But then physicians have to respond to those structural things and write prescriptions for pain management to manage those structural changes.

So it -- the two things are intertwined.

Q. Okay. Let's go to government advocacy, which starts on the same page here.

What is your opinion about government advocacy?

A. Well, my opinion is that government advocacy was out in front on promoting the use of pain management and, again, the -- you have to think of the

timeline here. The invention of opioids and the manufacturers making opioids available corresponded or coincided with pretty strident efforts on the part of the government to promote pain management. This would be the -- yeah, the decade of pain control and things like pain is the fifth vital sign. There was a lot of promotion on the part of various government agencies along those lines.

Q. So in this paragraph you reference an orchestrated effort throughout the US public and private health care system, correct?

A. Correct.

Q. So are you also including in this factor advocacy to the government?

A. Yes, that would mainly be covered under my next point, which is medical advocacy -- what I call medical advocacy, and that would be the role of medical societies sort of lobbying government agencies to increase access to pain management.

Q. Okay. So sticking with government for a moment here, you described

state-level accuracy I think, correct?

A. Well, in this bucket, I would include federal and state.

Q. Okay. And were there differences across states?

A. Only in the sense that some states were more vocal about it than others, but there were no states that were arguing that we should be more circumspect in our approach to pain management. They were all on the pain management bandwagon, if you will, back around that time.

Q. And did you do any research specific to advocacy in Ohio?

A. I believe I did review some documents from the Ohio Medical Society. I don't recall. I think I might reference those in subsequent sections.

Q. Okay. If you did, would they be in a section here somewhere?

A. Yes.

Q. Okay. And you started to talk about medical advocacy, which is the next category starting on page 11, correct?

A. Correct.

Q. What is your opinion about medical advocacy?

A. Well, again, corresponding time-wise or temporally to the advocacy on the part of government, governmental agencies, the medical societies were also advocating for pain management. And these medical societies -- I list some of them in Section 2.12, the US Pain Foundation, American Academy of Pain Medicine, the Academy of Integrated Pain Management. There's a whole bunch of them. They were -- going back and looking at the documents that they produced, sometimes in conjunction with the federal and state governments, they were contributing to, again, an advocacy, not so much for opioids specifically, although some of them did -- would list opioids as a way of fulfilling this sort of aggressive pain management philosophy.

Q. Okay. And I know you mentioned looking at the literature. When you're talking about documents they produced, did you review the documents themselves?

A. Yes, I don't recall offhand the

specific documents, but, yes, I reviewed -- and that goes for everything in this report I reviewed myself.

Q. Okay. Are they cited in the report?

A. Yes.

Q. Okay. And you referenced a time frame here.

Just for clarity, what time frame are you covering in this paragraph 2.12?

A. I think most of these causation or causative factors that we're looking at right now would generally correspond to, say, the late '90s through 20 -- somewhere between 2010 and 2015.

Q. Do some have different time frames than others?

A. Yes, I think -- you know, a lot of these initiatives started and stopped at different times. The federal government initiatives kind of were spread out over a ten-year period -- well, I think all of these initiatives were spread out over a 10- to 15-year period, with different starting and

stop dates.

Q. Okay. And in this paragraph 2.12 here, kind of in the middle, I want to make sure I understand your opinion here.

You write, "While there was general awareness among the medical community and provider groups of the risks of opioids at this time," correct?

A. Correct.

Q. And then you go on. There's more, but...

So are you opining there that there were no misperceptions about the risks of opioids?

A. No, I'm not saying that.

Q. Okay. Or the benefits of opioids?

A. Well, can you just say the first part of the question again?

Q. Sure.

And so I guess are you opining that there were no misperceptions about the benefits of opioids?

A. I'm not opining that either.

Q. Okay. And then on the same page starts your opinion on quality ratings, correct?

A. Correct.

Q. What is your opinion about quality ratings?

A. Quality ratings were something that also -- again, referring back to the general timeline, around this time, around the early '90s through, you know, early -- first decade of the 2000s, quality ratings became a very important factor. Actually, it started a little bit before there at the late '90s. And quality ratings include things like value-based reimbursement systems, sometimes called value-based payment. These were things that were scales, usually, that hospitals and health systems would fill out. Well, doctors, too, doctors had their own version of it. And they would score -- they would be scored, sometimes by patients themselves, on performance, how good are they doing as medical providers. These quality ratings were important because they provided financial incentives for providers to do

better on the scales.

The scales often or I think uniformly included questions regarding patient satisfaction. And studies have shown that the patient satisfaction score is heavily dependent on the effectiveness of pain management. And this became a very well-known fact. Around this time I was working -- or around that time, back then, I was working with the California Association of Health Plans, and it was a big -- that was a big topic of conversation regularly among the leaders of health insurance companies in California at the time, was how do we do better on our value-based payment scores, how do our providers do better on our value-based performance scores. And one of answers to that question is -- at the top of the list of answers to that question is we need to do a better job of pain management. So that's why quality ratings are on this list.

Q. Okay. And then the next one on page 12 is manufacturer marketing, correct?

A. Correct.

Q. Okay. What is your opinion

about manufacturer marketing?

A. Well, I think there's reasonably good evidence or reasonably convincing evidence that manufacturers went beyond what they would normally or they did -- they did things that would be considered beyond what they normally would do to market opioids.

Now, I say that with the caveat that they were doing this with a lot of other drugs as well, but they were particularly aggressive in their marketing of opioids, and I think there's good evidence of that, and I cite to that evidence in this paragraph.

Q. And you have contributors under manufacturing marketing, too, correct?

A. Correct.

Q. Why is that?

A. Well, my opinion is, again, as a health economist is that these distributors -- the large independent distributors, these would be like Cardinal Health and McKesson and AmerisourceBergen, companies like that, were -- or have been historically primarily aligned with the

manufacturers and working with the manufacturers to get drugs out into the market. So the independent distributors also have some sort of co -- I guess aligned incentives is better way of putting it versus other types of distributors.

Q. Okay. And so am I understanding you correctly that you're relying on your background here for this, not any specific facts from the opioid context, correct?

MR. BOONE: Objection.

THE WITNESS: Yeah, there's some evidence that those big distributors, those ones that I mentioned, comprise about 85 percent of the independent distributor market. And there's some evidence that they were working sort of in an aligned way with manufacturers when it came to opioids. I am not -- I have not done a deeper analysis of that issue, other than what I've reported here.

QUESTIONS BY MS. SALTZBURG:

Q. Okay. And part of your opinion

is that they were aware of sharp increases in supply because of the data that they had, correct?

A. Correct.

Q. How does that fit into the opinion on marketing?

A. Well, a number of ways. One is that these independent distributors, I believe, to some degree, enabled the manufacturers in their quest to increase demand for their products. Again, the details of which I've only seen bits and pieces of come out, mostly as a result of the -- this ongoing litigation. And the other aspect would be, I think what you just alluded to, which would be using their data to identify, you know, potential problems.

Q. And for purposes of this report, did you do any research into what type of data chain pharmacies have?

A. Can you just clarify what you mean by what type of data they have?

Q. What data they possess.

A. Well, I didn't do any specific research into that. I know chain pharmacies

have some very limited data on individuals who fill prescriptions at their pharmacies, name, address, primary care doctor -- or prescribing doctor, things like that. I think beyond that, they don't have what I would call -- I would make a distinction between population-level data and business-level data. I would say pharmacies have business-level data. Population-level data would be held by entities like the CDC, but I would also argue to some extent these large distributors also have some degree of population-level data.

Q. And do you know if, for example, Kroger had access to IQVIA data?

A. I don't know whether they had access to IQVIA data. I think the -- yeah, I can't really comment on that.

Q. I think you opine here that manufacturers were among the first to be found liable, correct?

A. Correct.

Q. Are you relying on the settlement agreements for that?

A. More or less, again, this is

where, as an economist, where my -- when I look for data on settlement agreements and proceedings on -- involving opioids, it is -- I'm only -- I'm basing my opinions only on what I find. I don't access to any more detail than that. I expect that the attorneys in these matters have access to better data than I have in that regard.

Q. Okay. Recognizing those limits, did you know that a jury found chain pharmacies liable in a case by two Ohio counties?

A. I've heard about that. I don't know any specifics of that ruling.

Q. Okay. And would that affect your opinion at all?

A. No.

Q. Okay. I think we reached our last factor here, which is on page 14. It's macroeconomic factors, correct?

A. Correct.

Q. And what is your opinion about macroeconomic factors?

A. I think macroeconomic factors are important in -- well, it's not that I

think that. I think there is evidence that suggests that macroeconomic factors are important in substance use disorder generally, and they have been identified as important factors in opioid use disorder specifically.

Q. Okay. And I want to focus on that first line there in paragraph 2.17 where you say, "There is no debate the economic factors in the US played a prominent and unprecedented role in opioid utilization in OUD."

Correct?

A. Correct.

Q. Now, you say there's no debate about the extent of the role of macroeconomic factors?

A. I don't believe there is. The materials I reviewed, I have not seen anything that suggests that they were not a factor.

Q. Okay. Have you ever done any empirical analysis on the relationship between economic factors and opioid use or OUD?

A. No, I haven't.

Q. Before we move on, I just want to understand something about the relationship of this section and then your discussion about potentially responsible parties in section, I think it's 4.

It seems like there's some overlap between the two, correct?

A. Correct.

Q. So, for example, you have manufacturer marketing as a factor, but then you could have manufacturers as a potentially responsible party because of marketing, correct?

A. Correct.

Q. So why are they two separate sections?

A. So there are two separate sections because the first section is contributing factors, and I thought it was important to lay out the contributing factors as there's a lot of literature supporting each one of those. And but then you have things like we have issues -- like macroeconomic factors, for example, is not a

responsible party. And the marketing example you gave is the most clearcut, but even in the medical advocacy, it's not obvious who the responsible party is in that case. So I felt there was a need for an additional level of discussion. That's one reason.

The second reason is I -- my approach is through the lens of economic theory, and in economics there's a common construct called externalities, which I believe is the section above the one you're showing right now on the screen. Externalities are -- the way that economists handle externalities is they need to know who are the responsible parties for the externality. There's a liability component of externalities. And that's why I'm -- essentially why I'm -- why I wrote this report in the first place, is that I believe that from an economics perspective, you know, within which I have all of my training, the construct of externalities is a useful construct within which to discuss opioids.

Q. And I guess kind of a big picture level it seems even for the factors,

right, to determine that something like you have regulatory approval as a factor, you have to have some evidence that the FDA or someone did something, that's why you have that as a factor, correct?

A. I have it as a factor so in the sense on the factor side, FDA -- regulatory approval is the stamp of approval that signals to people that it's okay to use a drug or a device or a diagnostic.

The -- on the responsible party side is, you know, what -- let's look at the evidence of what the FDA did specifically or didn't do specifically to contribute to the increase in opioid supply.

Q. And are you opining in this case that increased opioid supply caused increased opioid use?

A. I'm sorry, if you could just -- say that again.

Q. Sure. I just want to make sure I'm clear on your opinions.

Are you opining that increased opioid supply caused OUD or increased opioid use?

A. No.

Q. Okay. Let's go on to externalities. I think you started to discuss. And that section begins on page 15.

And you describe OUD as an externality of opioid misuse, correct?

A. Yes, with the caveat that it's a complicated dynamic, as we just alluded to -- I think as I alluded to in the answering of my question before the -- this is a somewhat more complicated -- or I shouldn't say complicated. It's a more complex application of externalities than we might typically see, say, in the world of environmental economics when we're talking about pollution. So in the environmental world, the production of a thing like steel produces pollution. Pollution is the externality.

As I get into in this section, it's more complicated in the case of opioid supply and opioid use disorder.

Q. I guess I have just really kind of a basic question, which is, if OUD is an externality, what is the purpose of going on

to calculate -- or to discuss costs or to translate OUD into costs?

A. Well, only because economists typically talk about the cost of externalities. That's the only reason for putting it in that language.

Q. Okay. And if you'll flip the page to page 16. I want to talk about your caveats a little bit that you just mentioned.

So you said opioids are more regulated than something like alcohol, correct?

A. I'm sorry, where are you exactly?

Q. In paragraph 3.3.

A. Okay.

Q. And I think one of your caveats that were -- that you mentioned there we're just discussing is that you opine that opioids are more heavily regulated than something like alcohol, correct?

A. Correct.

Q. How does it follow from that that the DEA or other regulators are to blame for the externality?

A. Well, in the -- in my opinion, the magnitude of the externality is what -- is what's at issue here. So if the regulatory agencies are largely failing in their remit to mitigate the externality, then the result is a higher magnitude of the externality.

Q. Would that be true for any externality?

A. I think so, yes. If we think about pollution, for example, the EPA, the Environmental Protection Agency's remit is to monitor emissions. And again, I don't know much about that -- the specifics, but let's just go with that as an example.

The EPA monitors pollution. If the EPA fails or sort of underperforms in its job of doing that, then we're going to wind up with more pollution than we thought we had.

Q. Okay. And when you're talking about the DEA here, is it your opinion that diversion plays an important role in OUD?

A. Diversion plays a role. The -- whether it plays an important role or not, it

depends on what you mean by important.

Q. Do you have an opinion about the extent to which diversion plays a role in OUD?

A. I think -- yes, and I think the extent of my opinions is summarized in the figure that appears in this -- in this section with regard to diversion.

Q. With regard to diversion.

Which figure is that? Are you thinking of 4.1?

A. I am. Oh, no, I'm sorry. Actually I'm thinking of 5.1, which, I apologize, it wasn't in the section that we were in.

And if that's going too far ahead, we can come back to that or I can just summarize it now.

Q. Why don't you go ahead and summarize it now.

A. And I -- I'm sorry.

MR. BOONE: She needs to find it.

THE WITNESS: Oh, she needs to find it.

QUESTIONS BY MS. SALTZBURG:

Q. It's on page 22.

A. No. I think it's page 29, no.

Q. You're right, I'm looking at 4.2.

A. Okay. So, you know, you asked about diversion, so I'm going to follow up with that. When we talk about diversion, we're talking about opioids being misused, and so they're being diverted away from either the people they were prescribed to or they're being stolen or obtained from friends and all of these other sources that have been identified in the literature.

So diverted opioids would generally be considered nonmedical use of opioids. So in other words, if they're being diverted, they're probably being diverted for nonmedical use.

When they're diverted for nonmedical use, now there are three different ways in which -- three different buckets, if you will, that that diverted -- those diverted opioids could fall into. And, by the way, when you're in this bucket -- so if

we look at the -- it's the peach-colored or salmon-colored cylinder, I guess, if you will, on the right here that says "nonmedical use of opioids" that would contain diverted opioids. But it would also contain illicit opioids. So that would feed into this bucket as well.

Q. Okay. And I do want to get into this figure. I think we are getting a little bit ahead of ourselves, but the one thing I do want to understand you have -- this figure --

A. Sorry.

Q. Is someone trying to talk?

A. I'm sorry, I said -- maybe I already answered your question on diversion, but I --

Q. No, I think what I'm asking is, this figure is in the cost section. For purposes of your opinions about causes -- what I'm trying to understand is -- let me ask you this.

On responsible parties -- well, we haven't gotten there either. I'm going to wait and come back to this when we can talk a

little more about the diagram.

A. Okay.

Q. Going back to your just your general discussion of externalities, in paragraph 3.4 on page 16, you start out there, "Economists have described specific remedies and policy instruments to address negative externalities."

Correct?

A. Correct.

Q. Okay. And what is the significance of that to your opinion in this case?

A. I bring that up because -- again, because of using -- as an economist, I would -- I would want to use this externality construct. And I think in using that construct, I would have to do due diligence as to the things that economists would want to look at and consider in using an externality framework, and that's what this list contains.

Q. Okay. And I guess what I'm trying to understand is, are you suggesting remedies or policy instruments here?

A. No, I'm not.

Q. Okay. And would list be the same, like whether you're looking at -- you list out here taxes, regulation, bargaining and courts?

A. Yes, I think you would need to address each of the items on this list, maybe to varying degrees depending on the type of remedy, but each of these items would have to be addressed.

Q. Okay. I didn't see a cite here, so I want to understand. What sources did you rely on in opining that each of these four things that you list here would need to be addressed?

A. Well, that would just be any source from economics that describes externalities. So textbooks on externalities, things like that. I think I do -- maybe in a different place, I might cite those kinds of materials.

Q. Okay. And the four things you list, which are you addressing in this report?

A. I'm addressing, I believe, just

Item Number 2.

Q. Okay. Just number 2.

Does number 2 need to fit with somebody else doing items number 1, 3 and 4?

A. Right, that's true. So if one were to do a full accounting of an externality, you would have to do -- similar to the way this case has been -- has been divided between liability and abatement, you would -- an economist would approach it similarly.

So item -- well, these items don't line up exactly with that, but Item 2, of course, is the -- is the liability part, and Items 3 and 4 would be the -- would be the abatement part.

Item Number 1 is just that just the -- has the negative externality result in a measurable cost. I think everyone agrees that OUD has a measurable cost. So that Item Number 1 is sort of satisfied already, and so it's 2 through 4 that would have to be done in a full analysis. But, again, given the scope of this particular report, I'm only interested in number 2.

Q. Okay. And you said everyone agrees OUD has a measurable cost; is that correct?

A. Yes, I think the literature is pretty clear on that, that there -- that OUD has an attributable cost associated with it. I'm not -- by simply saying that, I'm not saying that it -- that we know the -- all the different nuances of it. I think there's still a lot more work to be done, but there's a body of literature out there that says OUD has an attributable cost associated with it, and I don't -- I don't disagree with that general finding. I might disagree on the amounts and the methods and that sort of thing, but...

Q. But isn't the amount and the method the measuring part?

A. I'm sorry, say that again.

Q. So I guess I'm trying to square what you're saying here with what you have in your report, where I'm looking at page 17, paragraph 3.5. And you say essentially there's agreement there's some degree of cost or measurable cost, and then you write, well,

there is important debate as to the extent of opioid attributable costs, correct?

A. Correct. Yeah, that's a -- actually what I was just trying to say before.

Q. Okay. And I think I didn't understand that, because what I'm wrestling with is you have a measurable cost, but isn't the measurement the extent of cost?

A. Yes. Okay. So let me clarify that. So in other words, if an externality -- in economics, in the theory the externalities, which is, again a common construct within economics, if they -- if the cost of an externality is zero, then we don't need to do anything about it. So in other words, if pollution was harmless, then it wouldn't be -- we wouldn't even be calling it an externality. So it would be something we just didn't have to worry about.

So when an externality has a cost, that's what -- that's when we have to look into sort of what to do about it.

Q. Okay. So you're opining there's at least some measure of cost, not

that you can measure the full cost of OUD.

Is that fair?

MR. BOONE: Object to form.

THE WITNESS: Well, I just want to make clear, that's not the remit of this report. So I'm not trying to do that in this report, nor am I trying to suggest that those issues are important to my findings in this report.

QUESTIONS BY MS. SALTZBURG:

Q. Are you opining that the full cost of OUD is measurable?

A. No.

Q. And when you refer to the cost of OUD, are you referring to economic cost or the harms to the public health and safety?

A. Well, here I'm referring to the studies that have shown the cost of OUD, the attributable cost of OUD. However, I'm not -- and certainly not for the purposes of this report, I'm not suggesting that it's -- at this -- at this stage and this discussion to distinguish or explore what those costs should or shouldn't consider.

Q. And when you say attributable costs or opioid attributable costs here, are you referring generally to Medicaid and criminal justice costs?

A. Those are the types of costs that are most commonly reported in published studies, yes.

MS. SALTZBURG: Okay. And we've been going about another hour. Would you like to do a break, or would you like to keep going?

MR. BOONE: Take a break.

MS. SALTZBURG: Okay.

(Off the record at 11:48 a.m.)

QUESTIONS BY MS. SALTZBURG:

Q. All right. Let's move to Section 4, which is Responsible Parties. We're still on that same page, 17.

And just to orient us, when you talk about responsible parties for externality here, are you talking about parties responsible for supply, OUD or something else?

A. I'm referring to parties responsible for the increase in supply.

Q. Okay. So it's not parties responsible for OUD?

A. Correct.

Q. Okay. Increase in supply.

And then if you'll look at paragraph 4.2 at the bottom of the page here, you write, "Regardless of the approach to liability allocation, the idea that liability should to some extent be allocated to both present and absent defendants is well-established."

Correct?

A. Correct.

Q. And I didn't see a cite there. It may be later, but could you explain your basis for that conclusion?

A. Well, that's introduced in the paragraph above. This idea of orphan shares is a common construct in economics, specifically it's been mainly applied in environmental economics, but it just happens to be where most of that activity is.

But orphan shares are the shares that are representing firms or entities that are, for lack of a better word,

not at the table for a variety of reasons that I identify here in the report.

Q. Okay. And you say it's mostly the environmental context.

The sources that you cite in footnote 67 there, are those representing CERCLA or Superfund?

A. Yes, as I said, most of the examples in economics are environmental ones. Some of them are public health-related, but also sort of have an environmental flavor to them, too, like contaminated water supplies and things like that. But that's where -- it just happens to be in the economics that's where most of the examples are.

Q. And when you say examples, you're analogying to legal liability under CERCLA here, correct?

A. Well, yes and no. So I am not a legal expert, so my knowledge of CERCLA is limited to its application in environmental economics from the economics perspective.

Q. And lists concept of allocating of present and absent defendants.

Can you give any examples

outside the CERCLA context?

A. Well, sure. There's -- there are -- there's product liability, for example, cases and situations where there might be more than one responsible party, and those responsible parties might be either poorly defined or insolvent, et cetera.

There are cases -- more public health-oriented cases regarding contaminated buildings or contaminated water that are not necessarily CERCLA cases. The CERCLA cases tend to be the big Superfund, sort of big environmental contamination cases. There are a lot of other examples commonly called to environment economics that are sort of smaller scale things that would perhaps cross over between environmental and public health.

Q. And, for example, when you're referring to cases, are those court cases?

A. Yes. And most of the literature will cite to cases. Again, I'm not approaching this from the legal perspective, so I am citing -- when I do this citing economists reporting of cases rather than my delving into those cases.

Q. Okay. But economists are reporting about allocation to defendants in legal cases, correct?

A. Right. So the study of externalities -- I think there was a paragraph that you were referring to before. The study of externalities is one that involves -- or can involve remedies that span from taxes to regulation to bargaining and to courts. So the three of those, taxes, regulation and courts, involves usually some aspect of law.

So the field of law and economics and the fields of environmental economics and, again, to some degree public health economics, are all -- all kind of come together in -- on these kinds of issues.

Q. So I guess what I'm trying to understand here is, is your opinion about allocation of liability, are you suggesting that the way to do it should be to analogize as to who could appropriately be given a share of liability under CERCLA?

A. No. And to clarify, the -- I'm not saying that -- I'm citing to CERCLA more

as an example of the way that economists approach the allocation of liability.

I'm not suggesting that the CERCLA laws themselves should be employed here. I'm citing to them as an example.

Q. Okay. Right. And I'm not suggesting you're saying we should apply CERCLA here.

I guess what I'm confused about is you're saying you're looking at responsible parties as you would in a CERCLA action, but to determine who's responsible in CERCLA, you look at the statute, right?

A. Well, yes, to some extent, and I do get into that in subsequent sections. I'm not sure if they're showing on the screen right now. I get into how in the CERCLA cases or CERCLA-type cases they have approached the allocation of responsibility.

Q. So I guess what I'm confused about, are you suggesting that these economic articles or sources that you cite are suggesting that liability should be assigned or allocated differently than under the CERCLA statute?

A. Well, to be clear, the CERCLA statute, again, based on my limited understanding of the legal details of it and the legal -- and the application of it in court, that is outside of my realm of expertise. But my understanding of it generally is that it does not specifically indicate how liability should be allocated. It simply says that it needs to be allocated, and others have opined on ways in which it can be allocated.

There are CERCLA cases that have shown a resulting allocation. Generally the allocation is -- should be based either on volumetric data, if it exists, but volumetric data only applies when everyone's producing the same thing.

So if it's a paint factory, we can look at how many gallons of paint Sherwin-Williams produced on the site versus Benjamin Moore, for example. I'm not saying that's a specific case, but that's the type of -- that's what I mean by volumetric.

The other means of allocating responsibility when volumetric is not

available is a fair and reasonable approach. And --

Q. And --

A. I'm sorry, go ahead.

Q. No, I don't want to interrupt you. Were you done?

A. Yes, I was just about to end.

Q. Okay. Do you have something more?

A. No, that's it.

Q. All right. And I want to understand that. So when you talk about -- you're saying -- your understanding is that CERCLA doesn't say how to allocate liability, correct?

A. My understanding of CERCLA is that it doesn't explicitly lay out how to assign liability, again, other -- apart from what I just mentioned before.

Q. Okay. So is it your understanding that CERCLA doesn't say who should be -- it doesn't spell out standards for who can be a responsible party?

A. My understanding is that there are some standards that are applied

typically. I'm not as familiar with the specifics of them, but they collapse down to the two methods that I've described before.

Q. Okay. Have you ever been an expert in a case involving CERCLA?

A. No, I've worked in environmental cost cases, but I haven't -- I have not been involved in a CERCLA case.

Q. And do you have any experience in your consulting work with Superfund?

A. Not with Superfund, no.

Q. Have you ever published on that subject?

A. No, not Superfund.

Q. Okay. And you were mentioning orphan shares.

What's your understanding of -- to whom orphan shares under CERCLA can be assigned?

A. My understanding is that they can be assigned to either insolvent entities or entities that have some other sort of sovereign immunity. Entities that are otherwise difficult to name in a lawsuit. Again, this is -- I'm not exactly sure how

this has been applied in the real world, but that is my understanding.

Q. And is it your understanding that liability could be applied under CERCLA without identifying a specific individual or entity?

A. I believe that's probably possible, but I don't have a deeper understanding of that.

Q. Okay. And is it -- do you have -- are you opining a liability could be assigned under CERCLA without proof that someone violated CERCLA?

A. Well, let me reiterate a point I made earlier, that here I -- I'm applying -- I'm not applying CERCLA laws. I'm using CERCLA as an example of how economists would go about determining who's a responsible party in a study of externalities, which, again, is a common construct in economics.

So, again, I'm not opining that I -- I'm not offering a legal opinion or even a legal concept that CERCLA is an applicable law in this case. I'm not going in that

direction at all. I'm merely saying that it is a -- it is one way to approach the identification of responsible parties.

Q. Okay. So what I want to understand, too, is I understood you in your report to be sort of pulling the term PRP or responsible party from the CERCLA context, correct?

A. Yes, that's one area in which that acronym is used.

Q. PRP?

A. Correct.

Q. What other areas are the acronym PRP used?

A. Well, I've seen the acronym used in environmental economics literature and not necessarily with respect to CERCLA, just used generally in the environmental economics literature.

Q. And when you refer to the literature on environmental economics, is that literature on how to establish causation?

A. That's part of that literature, yes.

Q. Can you give me an example of something from that literature?

A. Well, I mean, I'm not sure what exactly you're looking for, but an environmental economics textbook will talk about liability and causation and responsible parties, not necessarily in the context of CERCLA, but it is a -- those concepts are very common in environmental economics. Again, as I said before, they're also common in public health matters as well.

Q. One thing that would be helpful is -- one of the sources that you cite under responsible parties on page 17 in paragraph 4.1, you have paragraph 68. There's an article by Kilbert, "Neither Joint Nor Several: Orphan Shares in Private CERCLA Actions."

A. Yes.

Q. Is that one of the examples that you're thinking about?

A. Well, that -- I can't remember the background of the authors who wrote that, whether they were environmental economists or not, but that was cited primarily because it

was, I thought, a useful description of the concept of orphan shares.

Q. And I guess what I want to understand is, when you say there's literature and text discussing liability in the context of environmental economics, is that legal liability?

A. I think an important distinction is that when economists think of liability, they don't think of it as legal liability necessarily. Economist's approach to liability is in alignment with the identification of responsible parties. So it is -- again, referring back to the very common economics example of pollution, like air pollution, an economist would say -- would be interested in which factories are producing the pollution. You would need to know which factories were producing the pollution.

So that's -- so that's different than a -- I believe, it's different than a legal liability argument. It's not a -- based on the finding of liability. It's based on trying to figure out who produced

what.

Q. I know you're saying you're not a legal expert. I'm not trying to belabor that point.

What I want to understand is you're analogizing to CERCLA for allocation to responsible parties, correct?

A. Actually, what I'm taking from this discussion of CERCLA and the reason I'm using it as an example is really just for two things. Well, one thing, and that's what you just identified, and that's the identification -- not even the identification, it's the concept of potentially responsible parties or just responsible parties.

And that concept -- this is, I think, a very good example of that concept. We see it in -- we've seen it in public health context as well, tobacco, for example. It's -- the interest was in identifying the producers of tobacco and who produced -- you know, that may be a more volumetric approach, who produced what and when.

So it is used -- my use of it

here doesn't go any further than this is one example of a construct or a conceptual framework in which potentially responsible parties could be identified.

Q. And -- okay. I just want to make sure. You're saying you pulled the concept of responsible parties from the CERCLA context, correct?

A. Well, I think that that language appears in other contexts, but, yes, I begin this section on responsible parties by referencing CERCLA just as a way to create that construct.

Q. Okay. And last question that's specific to CERCLA.

Is it your understanding that allocation as you described it comes into play before or after liability is established?

A. Well, that's a -- that's an interesting question that is beyond the scope of my report here. However, I would say, yes, I think the -- your questions of liability. And again, in economics, one would want -- again, using an economic

definition of liability, which is responsible parties. Responsible parties should need to be -- would need -- generally, need to be identified in advance of an abatement allocation, if that is what you're asking.

Q. Right.

So I guess it just seems a little circular to me and that's what I'm trying to understand, because you're saying -- you're looking at liability allocation, but you seem to be equating that with whether someone is a responsible party.

A. I'm not sure I follow. Can you try rephrasing that?

Q. Sure.

So when you refer to liability allocation, what does liability allocation mean to you?

A. In the context that I used that in this report is in the economics concept. So the economic theory, the economic theory approach to liability, which as I described before, would be expected to be different than an actual legal construct of liability.

So an economic theory, there's

a need when we're -- studying externalities, there's a need to identify the sources of the factors that contributed to the externality. A need, more specifically, to identify responsible parties.

So that's why I've included this discussion in this report, given the objectives of this report.

Q. Okay. So when you say the sources of factors, is that another way of saying the causes?

A. Well, we have to be careful there, because as I said before, the -- I'm not opining that the responsible parties generated the externality directly. So in other words, I'm not saying that, for example, the FDA is responsible for OUD. I'm saying that -- again, picking on the FDA is just as an example -- that the FDA is responsible for increase in supply of opioids, and then as we'll, I suspect, get into later, that there's a relationship between that and the externality, which is opioid use disorder.

Q. Okay. But when you say the FDA

is responsible or whoever -- any of these responsible -- anyone is responsible for the increase in supply, are you saying they used the increase in supply?

A. Well, yes, to an extent that is what I'm saying. So I -- when I -- I called them contributing factors in Chapter 2 or Section 2 of this report that we're looking at.

Q. Uh-huh.

A. And when I say contributing factors, I do distinguish those factors to be causative. And then in -- if you'll permit me just to identify the right figure, just because I want to make things very clear -- actually, I don't think we've gotten to the figure yet. Let me see.

In Figure 4-1 on page 19, I map those contributing factors which, again, could be called causative factors, causative of the increase in the supply of opioids, I map those to the -- to the corresponding PRPs. I apologize because I know we're not at this diagram yet in terms of the order of things, but it -- your question raises this

point that the contributing factors are causative of an increase in supply of opioids, not necessarily causative of an increase in the externality of OUD.

Q. Okay. I just want to make sure I understand. Maybe it would be helpful to back up a little bit and we can keep this diagram.

But so you're not opining that the potentially responsible parties that you identify in 4.1 are causes of OUD, correct?

A. Correct.

Q. Okay. Are you opining that the potential responsible parties in Figure 4.1 are causes of opioid supply?

A. Causes of an increase in opioid supply, yes.

Q. Okay. Fair enough. Causes of an increase in opioid supply.

And so you testified earlier, you are not opining that the increase supply caused OUD, correct?

A. I'm sorry, just repeat that again.

Q. I don't want to mischaracterize

your testimony.

I think you told me earlier that you weren't going to opine that increased supply of opioids caused OUD, correct?

A. Correct.

Q. So what is the purpose of identifying responsible parties for increased supply then?

A. Well, because to some extent there's going to be some proportion of OUD that maps back to the increase in supply of opioids. And so my opinion is that that proportion does sort of make its way back up through this diagram to these responsible parties, but I'm not saying that it's a direct relationship. And again, that's that -- in another section I deal with that.

Q. Okay. I just want to make sure I understand.

When you say it maps back to, though, isn't that another way of saying causes?

A. Well, it's maybe a more careful way of saying that these responsible -- these

potentially responsible parties, or PRPs, that are shown in this diagram that you're showing were contributing -- have contributed or there's evidence showing that they have contributed to an increase supply of opioids.

There is some proportion of an increase supply in opioids, some proportion that is attributable to three different misuse outcomes. Again, this is getting ahead of ourselves, and I prefer to talk about that when we get to that section, but -- and that -- the relationship, as I was speaking to before earlier, is complex and, you know, I would need to explain that more carefully than we can when we're in this section here.

Q. Okay. And just to understand, what I'm stuck on is I feel like you spent a lot of time in the report on factors and responsible parties for opioid supply, but what is the purpose of doing that if you don't think opioid supply is an important -- is the cause of -- is an important cause or contributing cause to OUD?

A. Well, the purpose of doing that

is that there's some proportion of opioid supply, of the increase in opioid supply. That is so -- again, we're -- let's look at this diagram.

So there's the supply of opioids, and then some proportion of those are diverted to misuse. The way this diagram shows, it shows the diversion going to nonprescription opioids. So what I mean by that is that it starts as a prescription opioid, there's diversion and then it becomes a nonprescription opioid in the hands of someone who presumably is either going to misuse it or pass it along to somebody who is going to misuse it.

So the relationship from OUD, which isn't even shown in this diagram, back up into this potentially responsible parties is through that mechanism.

Q. Okay. And so are you opining -- it's through the mechanism of diversion, correct?

A. Correct.

Q. And are you opining that any of these potentially responsible parties --

well, let me back up.

Are you opining that any of the factors you identify in this far left column are causes of diversion?

A. Causes of divergence.

Q. Diversion, yes.

MR. BOONE: I'm sorry, could you repeat that, Lisa?

QUESTIONS BY MS. SALTZBURG:

Q. Causes of diversion.

A. The factors in the left column, you're asking about?

Q. Yes.

A. Not directly, no.

Q. Okay. Are they indirect causes?

A. I think so, yes. Some of them are.

Q. I mean, which ones are those?

A. Well, for example, macroeconomic factors is, I think, going to be associated with divergence I think -- or diversion, I should say. So diversion is going to occur when there's a market for diverted opioids. And macroeconomic factors

insofar as they are influencing or driving rates of substance use disorder, that's going to increase the market for diverted prescription opioids. And also increase the market for illicit opioids. That's --

Q. Is that why you have the dotted line to drug traffickers here?

A. Correct.

Q. Okay. Are there any other factors in this list that you opine are causes of diversion?

A. Again, indirectly to the extent that some of these factors contributed to an overprescribing of prescription opioids, to the extent that some of these factors contributed to potentially inappropriate -- medically inappropriate or medically unnecessary opioid prescriptions, then that would indirectly increase the -- excuse me, increase the likelihood of diversion in the sense that it could create a supply of unused prescription opioids.

Q. Okay. And can you identify which factors in this list that would be for these indirect ones?

A. I think it's most of them. So, for example, changes in medical need, physicians believing that there's greater medical need for aggressive pain management. And again, as we talked about before, that was also due to government advocacy and medical advocacy might err on the side of overprescribing opioids.

Again, in that era of the late '90s to -- through 2010, 2015, somewhere around there, that that was the case. That was what was happening. And physicians were prescribing opioids in -- potentially in situations where they probably shouldn't have or whether they should have -- perhaps they should have prescribed less. And that's been discussed in the literature.

That's a situation, where, again, if there's excess supply due to these contributing factors, that could potentially increase the likelihood of diversion.

Q. Okay. Out of these -- and you only have -- you have seven factors here. Apart from changes in medical need and macroeconomic factors, are there any others

that you would opine are indirect causes of diversion?

A. Yes, government advocacy and medical advocacy are also -- actually, including -- and quality ratings as well and manufacturer marketing, all of these -- four factors have put pressure on physicians to prescribe more, and that's why they're on this list. And any time a physician is prescribing more and perhaps more than what is medically necessary, that increases the supply of prescription opioids and increases the probability of diversion.

Q. Okay. And did you do any analysis of the extent to which any of these factors play a role in indirectly diversion?

A. No.

Q. Okay. And I'm looking at macroeconomic factors. You have alignment of patients, providers and government, correct?

A. Correct.

Q. And that's under the PRPs, correct?

A. Correct.

Q. So are you saying that patients

are responsible for macroeconomic factors?

A. I'm not saying that patients are responsible for macroeconomic factors, no. I'm saying that macroeconomic factors affect patients and can affect patient, for example, drug-seeking behavior.

Q. Okay. So why then are patients responsible if they're being affected rather than causing this factor?

A. Well, they're responsible because they are responsible for the appropriate use of prescription drugs. So if they're engaging in activities surrounding diversion, whether they're on the receiving end or the diverting end, then they're responsible.

If they are engaged in obtaining opioids in some form from a drug trafficker, they are contributing to -- they're potentially a responsible party in that regard as well.

Q. And I'm still trying to understand -- we can talk more about that, but I'm just trying to understand structurally how this diagram works.

Is the intent that this column under PRPs, this identifies who is responsible for the factor that you identified?

A. Not necessarily. I think that could be one way to say it, but I think the main way I'm approaching it here is that we have -- contributing factors are again -- which again, I've flagged up as causative-type factors, and that's the seven that are listed here. And then how -- the flow of the diagram is important because I'm saying, these factors have been -- or map into specific responsible parties.

And it doesn't necessarily mean that the responsible parties are the -- are solely driving those factors. And that's especially true in the macroeconomic factor's bucket, but it's also to some degree true in some of the others as well.

So what I'm saying is these are the parties that are associated with that factor.

Q. Okay. And I think that's what I'm trying to understand. I'm stuck on the

map onto part.

The purpose of these two columns, as I understand it, is that you're saying a factor and then this next column you identify who is responsible for that factor.

And I think we covered then -- when you were saying responsible, you mean caused that factor, correct?

A. Well, again, that may be more true of them than for others. So, for example, let's look at the -- well, let's look at the government advocacy bucket.

So for that one, federal and state governments were responsible for the government advocacy. That's pretty clearcut.

The medical advocacy, providers were responsible for the medical advocacy. Not necessarily en mass. It was more provider organizations that were involved in advocacy, but nevertheless, they are providing providers.

In terms of regulatory approval or monitoring, it is the FDA, the DEA and the CDC who have explicit remits to carry out regulatory approval and monitoring, and it

is -- it is their actions in carrying out or to some degree failing to carry out that remit or failing to perform it efficiently that resulted in an increase in supply of orders.

So that's the way this diagram should be read. It doesn't work very well when you get to macroeconomic factors because I'm not saying that patients cause macroeconomic factors. This is a -- this is where the important -- the direction of the effect is important. The macroeconomic factors are determined by much greater external forces, globalization, for example. And those are things that affect how patients behave, if you will, and it affects how providers behave and it affects how governments behave. And it affects -- and the mitigation of macroeconomic factors is to some extent the responsibility of government, for example, to some extent. So that's how these columns interact, and that's how they differentiate as well.

Q. So are you saying the columns interact differently for different boxes?

A. Well, I think it's pretty consistent down to macroeconomic factors. Macroeconomic factors is the one that should have a footnote on it that it works a little bit differently because I'm not suggesting that any of those responsible parties were responsible for the mac -- for globalization, for example.

Q. Okay. And so just in terms of how this diagram is intended to work -- you said there's an association between the PRPs and the factors.

Are you saying that -- I guess you have this arrow from factors to PRPs and then eventually down to supply, correct?

A. Correct.

Q. So, and I know you've covered already that the role of factors -- or your opinions about factors and supply.

Are you opining that the PRPs are causes of increased opioid supply?

A. What I'm saying here in this diagram and in this section, Section 4, is that these -- there were actions taken or inactions, in some cases it's inactions, on

the part of the -- of what I've identified as potentially responsible parties. There are actions taken or inactions that contributed to the increase in the supply of opioids.

Q. Okay.

A. Sorry, just to further add. I probably should have -- that blue box probably should say increase in supply of opioids. I think in the --

Q. Okay.

A. -- text I say that, but the diagram doesn't reflect that.

Q. Okay. Let me write that on my end. I understand that.

I just want to make sure I understand, though. You said the PRPs contribute to the increased supply.

Are you saying that each of the PRPs is a cause of increased supply?

A. I think that's a fair restatement.

Q. Okay. And so why do you need the factors column at all?

A. Well, that's a good question. I wanted to map it back to my discussion of

factors. I -- the way I approached this as an economist is to first identify factors, and factors being more -- it's sort of more broadly defined, and then identify, okay, what are the entities within each of those factors.

It sometimes -- you know, if, for example, we were here mainly talking about the role of manufacturers, I wouldn't need to do that. I wouldn't have to have a manufacturing factor and a manufacturing PRP because it's pretty obvious they're the same thing.

In this case I decided to do it this way because, for example, you know, medical advocacy, that's kind of a diffuse term, what does that mean. It's the actions of individual physicians, but it's also the actions of individual -- of medical societies.

So when I discuss it in the context of factor, I'm talking about medical societies, clinical practice guidelines, presentations at conferences, all of these things that physicians are doing, saying,

hey, we need to do a better job at pain management.

When I discuss it as a PRP, I'm just saying providers, in this case physicians and health systems. I'm not necessarily -- I'm trying to identify an entity or set of entities as opposed to a factor.

Q. Okay. So is a fair way to look at it that you're opining that PRPs are a cause of supply, you're not necessarily saying PRPs are a cause of all of the factors like we discussed with macroeconomic?

A. I think that's a fair way to restate it, yes.

Q. Okay. And you're opining that this diagram where you have the factors and the PRPs, this is an established method of showing causation in economics?

A. Yes.

Q. Okay. And there's no empirical analysis that you're doing here for any of these PRPs or factors, correct?

A. That's correct, but I'm relying on empirical analyses undertaken by others

via the materials that are cited.

Q. Okay. So I think I understand that. I've seen in your report sometimes you'll say, you know, some experts say or experts agree, correct?

A. Well, yeah, sometimes I say that in the context, but in the footnotes, the sources that align with each of these responsible parties are sources -- or examples of sources. Obviously the opioid literature is very large, so these are examples of sources that support the identification of the responsible party.

Q. Okay. And so for forming your opinions, you're applying -- you're relying on the opinions of experts in these other sources; is that fair?

A. That is fair.

Q. Okay. And I know you mentioned you don't agree with all of the opinions and in all of the sources or it's rare that you would, right?

A. Correct.

Q. What's your method for deciding what part of a source you're going to pull

out for forming your opinion?

A. If, for example, I want to know -- let's again, just use the FDA as an example. I want to know what the role of the FDA was in the opioid era, because it goes back to the approval of OxyContin and onward from there, then I will research -- begin researching that, reading all of the materials having to do with the FDA's role in that, and generally go about that chronologically.

When -- you know, for example -- and this goes for all of the PRPs and contributing factors, the process is the same. I'm just picking on the FDA because it's the top of the list there.

When I do that, I look for the -- for materials that are -- that are, first of all, just generally helpful. So is it -- is it answering the question that I'm asking, the role of the FDA in opioids. So does it have to do with the approval of opioids, does it have to do with postmarket surveillance. What is the -- you know, and then -- yeah, so, I mean, that's pretty much

it. The determination of what part of the article to consider, if that's what you're saying about.

Q. It is.

A. Then is what parts of the article address the query that I am making. So if I'm doing a search in PubMed, for example, I might retrieve articles. If I do a search, for example, on FDA and opioids, I'll get a number of hits, probably a pretty large number of hits. Only a small portion of those will talk about or address the role of the FDA in the opioid situation that, you know, again from the approval of OxyContin on forward.

Some of them will say -- some of them will be -- some of those articles will be just sort of descriptive. Some of them come from the FDA and, for example, FDA's produced -- or produced a timeline of all of its activities regarding opioids. That's certainly very helpful.

Some of the articles, however, will focus more on sort of what, for example, maybe what the -- how -- if it's an article

from 19 -- you know, late '90s or something like that, it might be on, you know, the promises of opioids and how the FDA's approaching the approval of OxyContin or something like that.

You know, that may or may not be helpful. Again, it really just comes down to -- maybe a better example is one I gave before, which is if I'm looking for a particular number, let's say I want to know what percent of opioids are -- what percent of prescription opioids are misused, that search, that type of a search in PubMed can generate literally thousands of articles. So what I then have to do is find the ones that report an actual percentage and then look at those studies to determine what are they looking at, what are they studying, how do they do it, what are their sources. Some of them -- and it's sometimes -- a point of frustration in the health field is that some articles will simply offer opinions and a lot of articles will just simply report what other people reported.

So there's sometimes a need to

sort of look for the -- what the value added of that particular article is.

Q. Okay. And going back to the way that this diagram fits together, we talked about this dotted line with diversion to and some of the factors have an indirect role.

As we work our way down this box towards the right-hand side, so you have the PRPs each with a line that goes down to the increase in supply, correct?

A. Correct.

Q. And are those -- are any of the PRPs either opining are causes of diversion also?

A. Well, I think you asked me something like that before, and the way I would answer that is that these -- each of these PRPs are factors that I'm identifying as being associated with the increase in the supply of opioids.

Q. Okay.

A. There is -- we know there's diversion of prescription opioids to -- diversion to misuse, you know, just -- I know

the diagram shows diversion to nonprescription opioids, but that's not -- it's really diversion to misuse.

So what we don't necessarily know is that the nuances of the relationship between, for example, the FDA's role in divergence {sic} versus the physician -- the individual physician role in divergence versus the role of the accreditation agency in divergence -- I keep saying divergence, but it's diversion. We don't know the specific allocation of that responsibility.

MR. BOONE: Ms. Saltzburg, the time --

MS. SALTZBURG: Oh, is your lunch here?

MR. BOONE: It is.

MS. SALTZBURG: Let me wrap up just a couple of questions and then we'll stop.

QUESTIONS BY MS. SALTZBURG:

Q. I just want to make sure I understand. Is there any PRP or PRP group in this diagram other than drug traffickers that you're opining is directly related to the

supply of nonprescription opioids?

A. Well, there's -- the two arrows going into that box would be diversion and drug traffickers, yes.

Q. Okay. So you're not opining that any of the PRPs in these first seven boxes are directly causes of the supply of nonprescription opioids, correct?

A. The only -- the only caveat I would give to that is the DEA. Because the DEA is listed here sort of -- as to some degree double-listed.

The DEA is responsible for establishing quotas of opioid production and distribution or any prescription drug or I guess Schedule I, Schedule II prescription drug distribute -- production and distribution, the DEA has a -- has a role in monitoring that through its enforcement of quotas. So that's the way it's used in that -- in the top of the box there.

In terms of drug trafficking, the DEA is also charged with controlling or, you know, attempting to control drug trafficking and matters related to that. So

the DEA would be -- would be an example of a -- of a PRP that is serving sort of a dual purpose here.

Q. Okay. And I guess my question is, if you have to get to diversion before you get to the supply of nonprescription opioids here, what is the purpose of having all these other boxes besides the DEA and the drug traffickers?

A. I'm not sure I understand your question.

Q. Okay. So you -- I understand you to be opining on, we need to have -- you need to get to the supply of nonprescription opioid box on this diagram before you get to harms, correct?

A. I'm sorry, I'm still not tracking. I'm sorry.

MS. SALTZBURG: Okay. I feel bad I'm keeping you from your lunch. Let me ask you if I can think of a better way to phrase that. Why don't we break for lunch and we can start back up on this diagram again afterwards.

MR. BOONE: Okay.

THE WITNESS: Okay.

MS. SALTZBURG: And how long would y'all like to take?

MR. BOONE: Let's go off the record.

(Off the record at 12:56 p.m.)

QUESTIONS BY MS. SALTZBURG:

Q. So we're discussing your diagram before lunch, and I think one thing that might be helpful is if we go to paragraph 4.10 of your report, which is on page 22 to 23, just to identify who you have in that drug trafficker box.

Are you there?

A. Yeah, I'm sorry, you're talking about 4.10, that refers to physicians.

Q. Yeah, you're right.

A. You were asking about drug traffickers.

Q. Where is drug traffickers? Later? 4.19, page 26.

A. Okay. I'm there.

Q. So who do you include in the group for drug traffickers?

A. Oh, this would mainly be individuals who are obtaining opioids from drug traffickers. So these are -- these are not at all opioids sourced from the health care system. This would be either illegally imported into the country from a border state or imported via the mail. So that's one group.

I guess technically, a patient could become a drug trafficker if a patient is hoarding prescription drugs and then giving them to their friends and so forth. I think they're definitionally kind of fitting the description of a drug trafficker, although obviously not the standard-applied definition.

Q. And I think you write in here you would include individuals and patients who knowingly divert controlled substances for nonmedical use; is that right?

A. You're in that same paragraph?

Q. Yeah, I'm kind of in the middle.

It says, "Thus, group of drug traffickers includes not only criminals

involved in the business of illicit drug manufacturing and distributing, but also individuals and patients who knowingly divert controlled substances for nonmedical use."

Correct?

A. Yes, correct. So that refers to the comment that I made initially, which is in some cases a patient or an individual could cross over into this -- into the -- into a drug trafficker type of role. Again, I wouldn't be an expert on to how to necessarily classify a drug trafficker versus someone who is otherwise illegally distributing prescription drugs, but it seemed to me from my research that there are situations where one could cross over into the other group at -- perhaps based on the volume of activity.

Q. What kinds of situations would those be?

A. I think, for example, some individuals -- there's research on individuals who engaged -- either directly engaged in drug-seeking behavior or directly engaged in consistent diversion-type

activities for the purpose of distributing or selling those opioids at school or at work. I think the sort of traditional definition of drug trafficker wouldn't necessarily fit that person, but they are for all intents and purposes, at least from an economics perspective, they're performing a similar function.

Q. Okay. And when you say drug-seeking, would that include people with OUD?

A. It could. It doesn't necessarily have to.

Q. I think you said in New Mexico, at least, that you weren't blaming people with OUD, correct?

A. Oh, I'm sorry, could you rephrase that?

Q. Sure. I guess -- I think you testified in New Mexico that you weren't blaming people with OUD, correct?

A. Well, very generally, no, I'm not blaming people with OUD, that's correct.

Q. Is there a way that is not general?

A. And that's that if an individual is, you know, actively aggressively seeking drugs and purchasing drugs from drug traffickers and their OUD is as a result of that, you know, that's perhaps a different type of situation than somebody who sort of passively ends up in the OUD category.

But either way, I'm not -- that's not important to my analysis to blame individuals that have OUD.

Q. Okay. So for this group of parties here, could it also include pharmacies that knowingly fill illegitimate prescriptions?

A. Well, I would break that question up into two categories. So my answer to the question as you asked it is no. There -- there's -- because the question implies that pharmacies are filling, I think as you put it, illegitimate prescriptions, and I don't have any evidence of that or the opinions to the extent to which that is happening or not happening.

Q. So you're not opining one way

or the other about whether pharmacies are filling illegitimate prescriptions, correct?

A. Correct.

Q. Okay. And let me ask you this. I think you've written in your report here, I think you mentioned patients have sort of an implied obligation under the controlled substances laws, correct? And that's part of why you include them?

A. I'm sorry, do you mean why I include them as a potentially responsible party?

Q. Uh-huh.

A. Yes, but, again, not necessarily -- it -- it's not based entirely on that implicit contract or opioid contracts and things like that.

It's based on the -- more generally the responsibility to use prescription drugs responsibly and appropriately and as directed.

Q. And do pharmacies have obligations under the controlled substances laws?

A. I don't have an opinion as to

whether they do or not.

Q. Okay. And I think -- let me go to -- let's look right above that paragraph actually, still page 26 at 4.18.

You have a paragraph on distributors, correct?

A. Correct.

Q. One of your opinions as to why distributors are essentially a responsible party is for failing to diligently respond to suspicious orders, correct?

A. Correct.

Q. Okay. And what does it -- what is your opinion that distributors did wrong with respect to suspicious orders?

A. I think these large national distributors, the one that comprised 85 percent of the independent distributor network were in a position to use their data because they have data that's not quite population-level, but it's pretty extensive. They have the ability to -- or they had the ability to use their data to identify, you know, potential problems. That's my opinion, and that's why -- that's how I'm using that

Item Number 2 there.

Q. And the suspicious orders, that would be suspicious of diversion, correct?

A. Not necessarily. So there are ways of determining, for example, whether a shipment to a particular region of the country reflects or looks like something that it should look like. And that -- the distributors, again, because of their size, because they have data from all over the country, would have been in a position to potentially identify those types of shipments as potentially problematic. And others have opined that they had that ability and didn't exercise it.

Q. Okay. And the orders that distributors failed to diligently respond to are orders being placed by pharmacies primarily, correct?

A. I -- yes, I think that's to some extent true. There could be -- they might receive orders differently, too. I don't know, for example, the extent to which a pharmacy benefit manager is involved in that -- in that process.

But I think there's a number of different entities with whom -- who are -- who are purchasing from the large distributors that would include also hospitals themselves and health systems and things like that.

Q. Okay. And the orders would include orders from chain pharmacies, correct?

A. My limited understanding of pharmacy operations is that some of them have their own distributors. I don't know which ones have their own distributors versus which ones rely on these large, independent distributors.

Q. Okay. And you're relying to some extent on your -- as you've discussed, literature or public sources, opinions of others, correct, with respect your opinion related to suspicious orders?

A. That's my understanding, yes.

Q. Okay. And do you know if those sources, if they are opining or if they're looking at evidence about whether the orders that were suspicious were coming from chain

pharmacies like Kroger?

A. I don't have any knowledge of that.

Q. Okay. And what is the -- I guess why is it your opinion that if the pharmacies were placing the order that the distributors are responsible for failing to respond to it as suspicious but the pharmacies are not responsible?

A. I think the distributors, again, these large, independent distributors, in particular, have an ability that a retail pharmacy doesn't have, and that's to have the ability to see a larger picture in terms of the relationship between geographic characteristics, population characteristics and shipments. So there's a -- the distributors, in my opinion, would have the ability to calculate what an expected shipment would be based on the characteristics of the region in which the opioids are being shipped. By virtue of their -- the vastness of their data. I don't believe that the retail pharmacies share that ability.

Q. So I guess the reason -- my question, though, is the discussion of all of that knowledge that distributors have, the reason that's relevant is that because it gives them, you know, the view, right, as to why the order might be suspicious, correct?

A. Well, not per se. I think the -- it gives them the ability to detect some instances of suspicious orders. Again, they would be -- that would have to be done statistically, and statistics is -- there's going to be some margin of error around that.

So I'm wouldn't say that they can -- it's not a definitive process. In other words, they would not be able to definitively say, that's a suspicious order or a problematic order and that one is not. I think it would be difficult to do that.

Q. I guess maybe it would be helpful to ask.

What is your understanding of what a suspicious order is?

A. Well, again, I think I've been hinting at that, maybe not directly addressing it, but the -- a suspicious order

in this case would be an order that doesn't -- that is -- that is misaligned with the probable demand for opioids. And as I said before, that demand for opioids is largely driven by physician prescriptions for opioids.

So I'm not saying that all of that demand is medically necessary. I'm saying it's a demand that was triggered by licensed physicians.

Q. Okay. So let's talk about the DEA a little bit. That part, if you want to reference it, is on page 20 in paragraph 4.7.

So --

A. Okay.

Q. What are you opining makes the DEA responsible here?

A. Well, in this context, I'm talking about its the DEA's role in monitoring quotas and -- or establishing quotas and then enforcing those quotas. That's one part of it.

But also as the OIG, the Office of Inspector General, found the DEA also has, as the OIG phrased it, its data systems and

strongest administrative enforcement tools, the ability to detect and regulate diversion effectively.

So the opinion of the Office of the Inspector General, which is a monitoring organization of other government agencies, is that the DEA failed in its remit to monitor and control the distribution -- the production and distribution of prescription opioids.

Q. Okay. And is your opinion with respect to that second part you discussed based on the OIG report?

A. That's part of it. There are others that have similarly opined on the role of the DEA.

Q. And are those others stated in your report, too?

A. They may be. I would have to check.

Q. Are there --

A. I'm sorry. I'm sorry. For example, I just looked down and I saw right away that there's the OIG report, but there's also a GAO report, a Government

Accountability Office report, that essentially reaches similar findings, and that's referenced.

Q. Okay. And there was an obligation to provide the materials that were considered, so if you -- if there are materials that you're basing your opinion about the DEA on that are not cited in this report, can you provide those through your counsel?

A. Yes, I would, but I think I -- I think the materials that I relied on are cited here.

Q. Okay. And in terms of I think what you're discussing there, is you're saying the DEA policies and regulations did not adequately hold registrants accountable to prevent the diversion of pharmaceutical opioids, correct?

A. Correct.

Q. And who are the registrants?

A. Well, the registrants for -- are the entities that have to -- or that are the sort of the recipient of the DEA controls, and I believe those would be

distributors and manufacturers.

Q. Are pharmacies registrants?

A. I'm not sure.

Q. Would that be relevant to your opinion about whether pharmacies are potentially responsible parties?

A. It might be. I would have to look into that.

Q. Okay. And do you know if -- let me ask you this.

Based on your reading of these sources, in terms of holding registrants accountable, are you suggesting the DEA should have taken more enforcement actions against registrants?

A. I think the general opinion of the OIG report and the GAO report is that there's more the DEA could have done given their role in this process. And in the process of -- on the micro level, all of the full span of things they could have done, I don't know. But certainly there are many experts who agree that they should have done more due to their position, due to their data access and things like that.

Q. Is there any specific thing that you're opining here the DEA should have done?

A. Well, I think -- you know, for example, there -- the DEA supposedly knows the number of opioids that are produced and distributed in the US. They supposedly know via their data where those opioids are being distributed to. So I -- in that regard, they're similar to the distributors. They have access to population-level data. They could have potentially used those data to identify patterns that either violated their own quotas or suggested that their own quotas were set incorrectly, or even if their quotas were set correctly, maybe perhaps the data would have suggested the quota levels should have been different.

Q. Okay. Anything else?

A. No, that's the main example.

Q. Okay. And for quotas, what's your understanding of the function of DEA quotas?

A. My understanding is the quotas is -- the purpose of the quota is to monitor

the volume of prescription drugs produced and distributed in the US.

Q. Okay. And is it your understanding or -- a better way to ask that.

Let me say, is it your opinion that opioid sales are intended to be unconstrained as long as they're under the quota?

A. No, that's not my opinion.

Q. Okay. Why is that not the case?

A. Well, because you used the word "unconstrained," and I think any prescription drug has to go through a sort of supply chain and the -- at -- the most important link in there is the physician. So all physicians are under an obligation to exercise constraint when they write any prescription drug.

Q. So for all supply chain participants, regardless of what the quota is, there's an obligation to exercise constraint, correct?

A. Well, to the -- to the best of the abilities of each of the elements in the

supply chain, yes.

Q. Okay. Let me go to -- let me jump around to that diagram that you were starting to show me earlier.

I believe it was page 29, 5.1.

A. Okay.

Q. Before I do that, you were starting to tell me a little bit about the distinction between medically necessary prescriptions and medical use.

Is that right?

A. I don't recall what we started talking about at that juncture.

Q. Okay. I'll wait until we get there. Let's stick with page 29 then.

Sorry, so what does this diagram show?

A. This diagram picks up kind of -- where the other diagram that had a similar US supply of opioids box at the bottom, this diagram picks up essentially where that one left off.

Q. Okay. So that's that same box at the top as at the bottom of the other one?

A. Correct.

Q. Okay. And then you're opining that 96 percent of medical -- of opioids are for medical use, correct?

A. Correct.

Q. And you saying -- I think here is where we get into what I was just asking about with medical use and medically necessary.

What are -- what do you mean by medical use?

A. Oh, medical use of opioids definitionally -- it's not my definition, it's the medical community's definition -- would be an opioid that is used as -- well, let me back up.

So it would be an opioid that was written, a prescription that was written, by a licensed medical provider, and it was based on the perception of that medical provider's medical need on the part of the patient, and the patient then filled that prescription properly and then is taking the prescription properly. That would be considered medical use.

Q. Okay. And what's the

difference between medical use and medically necessary prescriptions?

A. There is a difference. Medical use is just what I just described. Medically necessary is a medical, a clinical concept. So a medical necessity is, for example, would a -- if you're a physician and you're writing a prescription based on your perception of medical need, whether it's medically necessary would be based on -- the determination of medical necessity would be based on if you had a -- if you took the case, data -- or not the case, but the medical record and handed it over to another physician and if they were able to confirm, yes, this is a medically necessary prescription or perhaps a panel of physicians and the panel of physicians agrees, yes, this is a medically necessary prescription, that's what we mean when we say medically necessary.

Q. Okay.

A. Or medically appropriate. Sometimes those things are interchanged.

Q. Okay. And have you seen the term "medically necessary" used differently

in different contexts?

A. Yes. It sometimes is, yes.

Q. Per your diagram here, you have 4 percent as nonmedical use of opioids, correct?

A. Correct.

Q. And is this just prescription opioids?

A. Yes.

Q. So where did that 4 percent figure come from?

A. Again, a combination of two difference sources. The one is the NSDUH, which is the National Survey of Drug Use and Health I think is what that stands for, reports a 3.59 prevalence of nonmedical use of prescription opioids and -- so 3.59.

And then another source probably need to refresh -- yes, this is described in Section 5.3. Another source which is the National Epidemiologic Survey on Alcohol and Related Conditions, and NESARC reports a 4.1 percent. So I'm taking 3.59 percent and 4.1 percent and calling it 4 percent. These are both survey estimates,

so I'm sort of averaging the two. The average of the two would be a little lower than 4 percent, but just rounding off.

Q. Okay. And other than those two sources, did you rely on anything else in arriving at that 4 percent figure?

A. No.

Q. Okay. And are you opining that the nonmedical use of opioids was 4 percent of the supply for the entire period we've been discussing?

A. No, that 4 percent -- or those data are -- there's not a lot of accuracy in terms of the period of time they refer to.

So the National Epidemiologic Survey on Alcohol and Related Conditions, which is -- yields the 4.1 percent, is based on an earlier period. So that's based on a peak period of total US -- total US supply of opioids.

So presumably that would be, perhaps, an overestimate because of the time period that it comes -- that it comes from. I think a current number would be lower.

The NSDUH number is a little

bit more up to date than that, but it's still asking individuals a few years ago, asking them about the previous year. So it's already -- there's a lag there on the NSDUH data as well.

But that would explain why the NSDUH number is a little bit lower than the NESARC number because they come from different time periods.

Q. Okay. And I think you have this in the footnotes actually.

So is the NSDUH data that you used the data from 2018 to 2019, correct?

A. Correct.

Q. And only that year?

A. Yes, I believe that's the year that I had pulled.

Q. Okay. And why is that year?

A. I think at the time that I pulled it, it was the most recent available.

Q. And then the other data, I don't think I can tell as well what time period the other data source was from.

When is that from?

A. 2012 to 2013.

Q. 2012 to 2013.

Okay. So for purposes of this figure, what time period are you intending these percentages to cover in terms of your opinions?

A. Well, there isn't really a precise time period that's covered here. It -- and this is -- this is a topic of debate. Does the -- in other words, does the time period start when opioids, long-acting opioids, were approved, which would be, let's say, 1995, or does it start when opioid use disorder started emerging in the community. So it's -- there's some debate about that.

I don't argue or opine that this diagram pertains precisely to a specific time period.

Q. Okay. So you're not trying to say factually nonmedical use of opioids was actually 4 percent in any given year, correct?

A. Well, I think that's -- I think that's approximately correct, yes. I'm not saying it's 4 percent in a particular year. It's certainly on average 4 percent. The

number has changed over time. I would argue that it has not changed a lot, if it has changed. It's been a fairly stable number.

And also, again, this diagram here, the use of that year in that diagram is illustrative rather than calculative.

Q. Okay. So illustrative rather than calculative. It's an example, and you're not trying to say, you know, the evidence is that this is -- that 4 percent of opioids in Montgomery County were for nonmedical use, correct?

A. That's correct. Because for the objectives that I identified earlier in this report, it's not important that I make that determination in an empirical way in this report.

Q. Okay. Then you have consequences -- or further arrows for the nonmedical use but not the medical use, correct?

A. Correct.

Q. So are you opining there's not externality associated with the medical use?

A. That is correct, yes.

Q. Okay. So you have got all of the externality on the nonmedical use side.

And then here -- let's see. You have, is it fair to say, three externalities that you refer to?

A. No. Do you mean on the right-hand side of the diagram?

Q. Sure.

What would you call those three boxes on the bottom right-hand side?

A. Okay. Let me describe those.

What I'm saying here, what I'm showing here, again, in an illustrative manner, is that the nonmedical use of opioids can be further disaggregated into three buckets. Let's just call them three buckets.

Q. Okay.

A. And then starting from the right and moving left, first is non-cost-incurring use, so that's an individual who is technically misusing an opioid, in other words, taking -- they're supposed to take three per day, four per day, that would land into that bucket.

The middle bucket is not

cost-incurring OUD. So this is an individual who might have been diagnosed as OUD but is not incurring a cost, in other words, they're not incurring additional health care costs. They're not interacting with the criminal justice system, nor are they interacting with the social and family assistance system or other systems wherein OUD attributable costs could be conceivably incurred.

So, again, it's an important distinction. Just because somebody has a diagnosis of OUD doesn't mean they're interacting with those systems and incurring or generating attributable costs.

Go ahead.

Q. Go ahead.

A. Well, I was just going to finish my thought in that the left-hand bucket down, again, on this three-batch part of the diagram is cost-incurring OUD. And this would be costs of OUD that do interact with the health care system or the criminal justice system or the social and family assistance programs and that sort of thing.

Q. So for all of these three

boxes, you're looking at monetary costs, correct?

A. Well, again, I'm using costs as a -- as an outcome -- or, yeah, as an outcome, right. Because I'm an economist and this is a liability report from the perspective of an economist.

So ultimately as an economist, we put everything in cost terms, so that's what I'm doing here. I'm just demonstrating how the supply of opioids or the increase in the supply of opioids might -- how that maps down into OUD.

Q. Okay. And so you're not attempting to demonstrate what are the harms to the public, correct?

A. Well, in this report, I'm not doing anything like that, that's correct.

Q. Okay. And I have a question about your non-cost-incurring box. So I think if we go to footnote 117 of your report, which is on page 30 at the bottom.

A. Okay.

Q. Okay. You say, "An example of non-cost-incurring OUD would be an individual

who experiences a delimited episode of OUD but does not seek medical attention during the episode, whose life is otherwise not meaningfully impacted by the OUD episode, and for whom there is clinical uncertainty as to the differential diagnosis."

Correct?

A. Correct.

Q. So are you saying it's unclear whether that person really has OUD?

A. Well, I'm saying that there -- that they might meet some of the criteria for an OUD diagnosis. They might even receive an OUD diagnosis, but they're not -- they're not -- they're not incurring costs in the system. They're not -- for whatever reason, they're just not incurring costs in the system. I guess that's probably an easier way to describe it.

Q. Okay. Because my question, do you know if under the DSM-5 the definition of OUD involves a clinically significant impairment or distress?

A. I don't recall offhand, but I do know that the -- that the DSM definitions

don't typically have any requirement in terms of whether it's cost-generating or not.

Q. So in this Box 2 -- and we can put that footnote away.

Would you include here someone who is suffering from OUD but doesn't get into treatment, so there's no financial costs to the treatment provider?

A. I think if that individual was not incurring any costs across the system, they would be in that non-cost-incurring OUD box. However, if that person -- if it's inevitable -- if that person is in the process of seeking treatment or in the process of needing assistance, then, you know, for all intents and purposes, they would be in the cost-incurring OUD box.

Q. And how would you know that they were in the process?

A. Well, and you wouldn't necessarily know that. This diagram is not -- and the intention here in this discussion, not just the diagram, the entire discussion, is that this isn't a clinical decision-making tool. So this is not

something I would hand to a physician and say, you know, here, can you -- please put your patients into these boxes. This is more of an economics tool to say, what is the pathway through which the externality is generated.

Q. The externality is OUD, right?

A. Correct.

Q. And so what is the pathway to OUD here?

A. Well, the pathway to OUD is the non -- starts with the nonmedical use of opioids and then it generates a cost-incurring OUD.

In economics -- the next box over, which is the non-cost-incurring OUD, the way to think about that would be like if there's -- if there's a level of pollution that doesn't cause -- that doesn't result in a measurable cost of any kind, it doesn't affect people's health, it doesn't affect the environment, the climate change, et cetera, then that is still pollution. It's still a negative externality, but it is one, as of that time, zero cost.

Now, if you just add a little bit more pollution to it, it could become a measurable cost. But that's the best example I can give. I'm not sure if that's helpful.

Q. I think so. And I guess going back to the boxes. So what if someone dies of an overdose without being diagnosed with OUD, what box would that be?

A. Without being diagnosed with OUD even posthumously?

Q. Correct.

A. Well, that individual statistically is going not be -- generally be counted as OUD. The costs incurred by that person, though, might still be recorded in various places, even without the OUD diagnosis.

But, you know, unfortunately in that situation there would be no way to really associate those -- that person as -- there would be no way to classify that person as an OUD case.

Q. Someone could be in all three boxes at different times, correct?

A. Correct.

Q. Okay. And I think you've already answered this, but I just want to be clear.

You don't use what you described as the opioid attributable costs as a proxy as harm to the public, correct?

A. I'm of the opinion that you can. I'm not saying here that it's a simple process. In other words, if we know that cost, then we know the harm to the public. I do think, though, that in the case of -- considering the other two boxes, that those two boxes would be expected to result in either zero costs or minimal costs to the system or harms, and whereas the cost-incurring OUD is where the costs are incurred.

So in the way that I'm approaching this, I'm not -- I'm assuming that cost-incurring OUD is the main externality here.

Q. Okay. And that's an assumption that you're making?

A. Well, it's an assumption, but it's just not -- it's not -- it's grounded in

the -- the assumption is grounded in the literature on OUD. For example, most of the studies, if not all of the studies, to date on OUD look at cost-incurring OUD or make the assumption that any -- that the attributable costs associated with OUD, in other words, patients with OUD versus without, diagnosed patients with versus without, that attributable cost difference is -- is the externality, is the cost, is the cost of the negative externality.

Q. Okay. And that may be helpful to understand because I was reading this box as cost to the county.

Are you including all, you know, financial costs of, you know, treatment, criminal justice or only costs incurred by the County?

A. Well, just to be clear, in this liability report, I'm not doing any of that. So I haven't gotten that far in any of the work that I've done, and I'm certainly -- it's certainly not part of this report to -- to get into the patients.

Q. I guess moving on, if you

have -- let's say you're removing barriers to treatment, you're getting more people into treatment, so you're seeing higher treatment costs could you have higher costs but it's not correlated with harm for OUD?

A. Well, there's difficult question to answer. I think you have to identify what you mean by harm.

Q. Okay. And then on this same part of the report where you're talking about the attributable costs, on page 31, you also have some -- an opinion about the prevalence of OUD, correct?

A. Well, this refers to the -- to those numbers we were referring to Figure 5-1, yes.

Q. And for the two OUD boxes that we were looking at the bottom there, you opine that the prevalence of OUD is .89 percent, correct?

A. Correct.

Q. And how did you arrive at that figure?

A. That number is the NSDUH.

Q. And the NSDUH data is widely

recognized as undercounting OUD, correct?

A. I disagree with that. I wouldn't say that it's widely recognized as undercounting.

Q. Do you have an opinion about whether the NSDUH data undercounts OUD?

A. My feeling is that NSDUH data is a reasonable source of information on that. I don't have an opinion as to whether it overcounts or undercounts. I think the arguments -- I'm familiar with the arguments made that it undercounts. I think similar arguments could be made that it might overcount.

Q. Okay. And what is the purpose of estimating the prevalence of OUD here in terms of how that fits into your overall opinion that we were just looking at?

A. Well, it actually doesn't fit into the overall opinion. It is -- it is included in this chart as an illustration, and my opinions in this report don't actually rely on that.

Q. Okay. So your opinions don't rely on that figure?

A. Correct.

Q. And I just want to understand. What is the purpose of including them in the report then?

A. Well, because I have these pathways that are shown in Figure 5-1, and I thought it would be useful for the reader to sort of see the -- well, let me back up. Sometimes when economists draw flowcharts, they'll use a thicker arrow to refer to sort of capture approximately the volume that's going in that direction of the arrow. So that's one way I could have done it.

I've chosen instead to just provide some percentages based on some widely cited data as an illustration of how patients or opioids would sort of trickle down through this process leading to the externality.

So it's really just as an illustration.

Q. Okay. So it's just an illustration. You're saying that was the prevalence of OUD in Montgomery County at any given time?

A. Correct.

Q. And I didn't ask you this for all of the sections we've been going through. I think I just did for section 2.

But do they all work the same way, where the materials you're relying on for, you know, a given point are cited in the footnotes to that paragraph or paragraphs?

A. Yes.

Q. Okay. And then let's look at the Section 6 on implications, starting on page 31.

A. Before we start that, would it be okay to take a quick break?

MS. SALTZBURG: Oh, yeah.

Let's go off the record.

(Off the record at 2:22 p.m.)

QUESTIONS BY MS. SALTZBURG:

Q. I was about to go into Section 6. I realized it might make sense before we get that specific to Montgomery County to keep on big picture first. So I want to jump to the section with your opinion Dr. Cutler's report, which is Section 7, starting on page 34.

A. Okay.

Q. Okay. So one of your overarching critiques is the opinion that retail pharmacies do not induce demand for prescriptions, correct?

A. Correct.

Q. In your view, based on what we've discussed so far, failure to perform monitoring functions has the same effect as inducing sales, correct?

A. I think it can in some cases, yes.

Q. Okay. So for an example in a pharmacy case, the effect of filling instead of refusing to fill an illegitimate prescription would be more prescriptions, right?

A. Well, I think there's an important distinction there, and that is that a pharmacy has to start with a prescription, whereas a lot of these other factors were factors that drove the increase in the number of prescriptions.

So, again, I would argue that that's an important distinction.

Q. In terms of that overall number

of prescriptions, though, if a pharmacy fills a prescription rather than refusing to fill it, there are going to be more prescriptions, right?

A. Let me think about that. I'm sorry, can you just rephrase that or repeat it anyway?

Q. Sure.

I think you said you don't have an opinion one way or the other about whether pharmacies are actually filling prescriptions that are illegitimate, correct?

A. Correct.

Q. Do you have an opinion about whether pharmacies have an obligation not to fill prescriptions that are illegitimate?

A. I think they have an obligation to fill legitimate prescriptions.

Q. Do they have an obligation to refuse to fill prescriptions that are not legitimate?

A. I think it depends on the ability of the pharmacy to identify what's legitimate and what's not legitimate.

Q. So let me back up for a minute.

I think go to paragraph 7.3 on the next page, top of page 35.

About halfway through, you say, "A retail pharmacy cannot dispense a filled prescription without a verified and legal prescription initiated by a licensed health care provider."

Correct?

A. Correct.

Q. And is it your opinion that it's practically impossible for a retail pharmacy to do that?

A. Well, I'm not sure what you mean by practical, but I would say it is -- it is not possible for a retail pharmacy to fill a prescription that does -- either does not exist or is obviously fraudulent, let's say, for example.

Q. Okay. When you say it's not possible, do you mean it's not legal?

A. Correct.

Q. But as a factual matter, it is possible to do something that's not legal, correct?

A. That's -- as a factual matter,

yes, but I'm not aware of any illegal or criminal allegations along those lines. If they exist, I'm not familiar with them.

Q. Okay. So do you know one way or the other whether the county in this case is alleging that Kroger filled prescriptions that are not for legitimate medical purpose?

A. As I said before, I didn't review the complaint before this deposition, so I'm not familiar with the specifics of it.

Q. Okay. And you didn't request any materials from Kroger one way or the other related to its diversion controls, correct?

A. Correct.

Q. Are you familiar with the concept of red flags of diversion?

A. Yes, I'm familiar with the concept.

Q. Do you know if a pharmacy has an obligation with respect to red flags of diversion?

A. I'm sorry, what do you mean by obligation exactly?

Q. Let me ask. So if a pharmacy

receives a prescription that raises red flags, does the pharmacy have an obligation to inquire further?

MR. BOONE: Objection. Form.

THE WITNESS: I honestly don't know enough about the specifics of the red flag system to the extent it is a system. I'm not familiar with what the -- operationally what pharmacies are -- how pharmacies are supposed to respond to those.

QUESTIONS BY MS. SALTZBURG:

Q. Okay. And would it affect your opinion in this case if there were evidence that Kroger or chain pharmacies were turning a blind eye to red flags of diversion?

A. It would not affect this report.

Q. Okay. And one of your main opinions is that retail pharmacies have no incentive to -- or no economic incentive to increase prescriptions, correct?

A. Well, can you point to where I said that? I don't recall phrasing it that way.

Q. Maybe I am phrasing it on economically -- let me just ask. Do retail pharmacies have an economic incentive to increase prescriptions?

A. Well, that's kind of like a -- it's a very difficult question to answer because it's not possible for pharmacies to increase prescription sales.

Q. Well, it's theoretically possible to increase sales if they were filling prescription -- let me ask you this.

Do you know one way or the other if chain pharmacies has sales targets for their stores?

A. No, I don't.

Q. Would it make economic sense for a pharmacy to set sales goals if there's nothing that their staff can do to meet them?

A. I don't know the nature of those types of sales goals, to the extent they exist.

Q. I'm just asking as a general economic concept.

Would it make economic sense to set sales goals that staff has no way of

meet?

MR. BOONE: Objection to form.

THE WITNESS: No, that would not make sense.

QUESTIONS BY MS. SALTZBURG:

Q. Okay. You opined that there were pill mills in Montgomery County, correct?

A. Correct.

Q. And the pill mills were writing prescriptions, correct?

A. Correct.

Q. And those prescriptions were being filled at pharmacies, correct?

A. Well, I know that at least in one of those high-profile pill mill cases the prescriptions would be filled at the physician's own pharmacy.

Q. In which case was that?

A. I don't recall offhand which case it was.

Q. But it was a pharmacy, correct?

A. It was the physician's own pharmacy apparently located in the physician's building.

Q. Were there other pill mills that you read, you know, literature material about his prescriptions were being filled at pharmacies?

A. Well, there were other pill mills, but I don't have any information on those pill mills as to where prescriptions were being filled, what types of retail pharmacies were filling them.

Q. Okay. I'm not asking about types of retail pharmacies, but I'm just asking were they being filled at retail pharmacies?

A. Well, I presume so, but I don't know, for example, whether they would be filled at the physician's own pharmacies kind of similar to that -- to that one case that I'm thinking of.

Q. You just don't know one way or the other?

A. Correct.

Q. Let me turn to paragraph 7.11, which is on page 37. And you start out there, "Cutler also is of the opinion that opioids shipped to Montgomery County did not

reflect medical need. I disagree."

Correct?

A. Yeah -- yes, I see that section.

Q. Okay. So is it your opinion that opioids shipped to Montgomery County were exclusively for a medical need?

A. No.

Q. Okay. So why are you disagreeing with Dr. Cutler there?

A. Well, Cutler seems to imply in his report that they were -- that the shipments did not reflect medical need. My argument would be that some proportion of the shipments did reflect medical need.

Q. Okay. So are you reading Dr. Cutler's report to say all of the shipments to Montgomery County were for illegitimate use?

A. Well, I'm not sure -- I don't have his report in front of me, so I don't recall how he phrased it, but I was under the impression after reading his report that he was of the opinion that a large proportion of the opioids shipped to Montgomery County did

not reflect medical need.

Q. Okay. And you disagree with that?

A. Well, I disagree with it to the extent that Montgomery County is -- it has a less healthy population relative to the state of Iowa {sic} and relative to the country, and that alone could reflect some proportion of whatever additional opioids may have been sent to Montgomery County and that may have justified a substantial portion of the medical need.

I don't know what those proportions are, so it's just my opinion that it's -- that one can't say that the opioids shipped to Montgomery County did not reflect medical need.

Q. Okay. So you're agreeing that some portion is not reflective of medical need, and you don't have an opinion about what that portion is; is that fair?

A. That's fair.

Q. Okay. And when you say that Montgomery County is less healthy, are you referring to back I think there were some

sources about the number of adults who were smokers and maybe another publication there?

A. Yes, it was smokers, cancer rates, obesity, things like that.

Q. Okay. Well, actually, let's -- we don't need the report because you remember them.

Is it your opinion that the number of adults who are smokers is correlated to the need for opioids?

A. It can be. Smoking has been shown to be a risk factor in cardiovascular disease, certain types of cancers, and some metabolic diseases and wounding healing. All of those things could then secondarily be indicative of demand for pain management, pain medications, including opioids.

Q. Okay. And Dr. Cutler's analysis has some variables that were intended to control for pain management needs, though, right?

A. Are you referring to his regression analysis?

Q. Yes. Dr. Cutler's report describes controlling for economic,

demographic and medical variables. I'm doing that memory, so it may not be exact, so that's why I'm --

A. Yes, Dr. Cutler does attempt to control for those factors, and I think it was -- it was right for him to attempt to control for those factors.

Q. And would those factors address, you know, what your concerns about Montgomery County being less healthy?

A. I'm not sure the fact of the data that he was using would sufficiently capture those effects, and in addition to that of course as I point out later, there was some other issues with his regression analyses that could also bias the results in such a way that it wouldn't matter whether he had a better measure of that or not.

Q. Well, let's -- maybe if we jump to the regression, we can come back to the -- which I believe --

A. Page 38.

Q. 38. And it wasn't clear to me what specific regression or exhibit to the report you were critiquing.

Could you just describe what that is?

A. Yes. And -- yeah, I'm sorry, I didn't identify exactly which tables. But these comments refer to all of his regressions that appear in the appendix or appendices, I should say. And because I think all of his -- because he used the same approach in each of his regressions, each regression in my opinion suffers from the same limitations that I identify here.

Q. Okay. And you opined that the regression suffered from admitted variable bias, correct?

A. Correct.

Q. Okay. What variables are you saying should have been included that were not?

A. Well, to start, I would look back at my Chapter 2 or Section 2 of my report to make sure that there are -- well, the combination of the contributing factors discussion and the PRP discussion to identify -- to make sure that all efforts have been made to identify all the variables

that reflect those contributing factors because those, again, are the ones that have been identified in the literature as contributing to an increase in the supply of prescription opioids, which is the outcome of interest in Dr. Cutler's regressions.

Q. Okay. And just for purposes of understanding here, would Dr. Cutler in his regressions -- and his report is not available. Are there specific variables that you're saying should have been input?

A. I think, yes, how those variables would be measured and exactly where those data would come from I think is a -- is a -- would be kind of a separate analysis that I have not undertaken at this time.

But in looking at his list, it's clear that he was trying to include some number of contributing factors, but there were some that he didn't include. For example, in his models of opioid use disorder or mortality -- or opioid-related mortality, let's say. Mortality -- in a model -- mortality would be modeled like a survival function and -- which is a common tool used

by health economists, epidemiologists and biostatisticians. And a survival function would have to include something about treatment. So are there -- mortality is a function both of whatever is causing the mortality like, say, lung cancer, mortality is a function of smoking, but also treatment. So you can survive lung cancer with treatment or certainly survive longer with treatment. So that would have to be part of the equation.

So in this instance the way that now Cutler's regressions are at the county-level, he distinguishes between small counties, large counties, but his regression are at the county-level. So at the county -- when running a mortality model at the county level, still needs to somehow take into account the extent to which those individuals are being treated or not. So let's say, for example, in county X, for some reason there was limited access to treatment and -- but in county Y, there was a lot of treatment where you're going to find very different mortality rates and that would have to be accounted for

in the model. This is just one example. There are several other examples of those types of variables that you would expect to have to be included in a model of mortality.

Q. And are all of those examples in the report to the extent that you've identified them?

A. I think I've identified some of them in the report. I wouldn't say that my list is exhaustive. I think, again, I have not sat down as part of my report to do my own set of regressions and come up with my own alternative set of coefficients and that kind of thing. I'm not doing that here.

So I'm suggesting that there are -- there appear to be enough omitted variables to have -- to be causing an omitted variable bias. I was not under the impression that Dr. Cutler sufficiently addressed that problem.

Q. So you're saying you haven't done your own analysis. So you aren't affirmatively opining that inclusion of the variable as you described as omitted wouldn't have changed the results, correct?

A. I don't know whether they would have or not. I suspect they would have. In a regression, any time you add or subtract a variable, the results could change. I don't know the extent to which the inclusion of those variables would change the outcome of the model. It would depend a lot on how those variables were measured, what the sources of data were, that kind of thing.

Q. And you mentioned that there are some variables that were omitted in the report.

What are those?

A. Well, I would have to think about that. Actually, it's difficult to do without Cutler's regression results in front of me.

Q. Okay. You opine in your report about variables that were omitted, correct?

A. Correct.

Q. You can't tell me what those were?

A. Well, yeah, I can tell you the ones that I list in my report, yes. In Section 7.15, I list patient characteristics,

patient comorbidities, the role of illicit opioids, treatment modalities and the role of co-occurring substance use disorder. Those are all things that you might want to include in a mortality model. And again, Cutler, includes some things that get at least one of those, so patient characteristics, he had age and gender in his model. Correct -- rightly so, but he didn't have a lot of those other measures in his model.

Q. When you say might want to include, are you saying it's necessary to include those?

A. Yes, it's necessary to include. I probably should have phrased it that way.

Q. Any other variables that you can think of that you think are necessary?

A. I think Cutler was also a little bit light on supply side variables. So, for example, a supply side variable could be, for example, the DEA quotas that we were talking about. Is there a way -- would there be a way to incorporate the DEA quota information into a model like this.

Q. Do you know if there is a way

to incorporate it or not?

A. I suspect there is. Again, I haven't explored that. I haven't attempted to do these types of regressions on my own.

Q. So you don't know one way or the other today whether that's possible?

A. Correct.

Q. And if you could go on -- or, actually, I think we have to go backwards now to 7.4, which is on page 35.

And you opine that, "Opioid misuse is likely to some degree endogenous to supply."

A. Correct.

Q. Okay. And what is endogeneity? I'm probably pronouncing that wrong.

A. Endogeneity, also referred to as simultaneity, it means that in a -- it's a concept that's really kind of unique to regression analysis. It's a situation where in a regression the determination of -- well, let me give a -- provide a little background on regression just for the record so that there's some understanding of the terms that I'm using.

Regression has independent variables or right-hand side variables which are believed to be variables that are associated with the outcome or the left-hand side variable.

The outcome variable is -- again, is believed to be a function of the independent variables.

In simultaneity or endogeneity, the outcome variable and one of the independent variables are codetermined or they're codetermined at the -- meaning that you can't have one without the other. And when you include -- when you specify a regression model that has that problem, then all the results end up being biased or potentially end up being biased.

Q. When you say it's likely, you're not opining there's, in fact, endogeneity here, correct?

A. Well, actually, I am, because I actually took a couple of his regression models and corrected for endogeneity in them and that did change the results. So it is my opinion that the endogeneity was very

important.

Q. Okay. And you say a couple of his regressions. Are those the two that you described when we were talking about your file for the case earlier?

A. Yes.

Q. Okay. Is there a reason you didn't include those in the report?

A. The regression results?

Q. Uh-huh.

A. That was more or less an oversight. I wasn't -- I didn't intentionally not include them. I was doing the -- I did this analysis as a -- I guess I was thinking in my head, this is an illustration of how the model -- his models are susceptible to endogeneity, and I wanted to point out, you know, how they're susceptible to endogeneity.

Q. Is it your opinion that OUD causes opioid shipments?

A. Well, no, not -- not exactly. This why it is a construct that is primarily something that is important to regression and it may not have a good, real world analog.

It is my opinion that it is possible for areas that have higher rates of OUD to have higher rates of opioid shipments, not necessarily implying that one causes the other. And it is -- and the argument there is essentially along the lines of, you need more opioids in order to have more opioid use disorder. That doesn't mean they have to be prescription opioids. In fact, of course in recent years we know that most of it, the vast majority of it, is coming from illicit opioids.

But there is some level -- again, the real world analog doesn't work as well, but regression-wise, when you have two variables that could potentially be codetermined, you have that endogeneity problem, and again, the result of that is it biases the coefficients on all of the variables, all of the independent variables.

Q. And I think you've answered this, but did you do any analysis to establish the level of shipments that medical need was justified in Montgomery County?

A. I did not.

Q. And in saying that people in Montgomery County are less healthy than in other areas, it did not appear to me that you looked at whether the statistics you cited changed over time, correct?

A. I don't believe I looked at changes over time. I think I looked at a point in time.

Q. Okay. And the only regression analysis that you did is the part we already talked about, correct?

A. The only regression I did was rerunning two of Dr. Cutler's regressions.

Q. Okay. And in those you say you replicated a regression with 2SLS.

Correct?

A. Correct.

Q. And was that an OUD regression alone or something else?

A. Let me refer to the report and see if I can remember which -- yeah, I think I meant to indicate which tables. I think one, if I remember, is table -- I think it was A-6. He had a number of different regressions. One of them was -- one of them

was the effect of opioid shipments on opioid morality rates. I think he also had one on the effect of opioid shipments on OUD.

I believe those were the two I replicated.

Q. Okay. And can you provide any additional information about what you did apart from what's in the report?

A. What I did was -- it was pretty simple. I -- because I had Dr. Cutler's data and I had Dr. Cutler's regression equations, I simply replicated exactly what they did but doing it -- using this two-stage least squares approach, which is an accepted, a very commonly-applied way of controlling for endogeneity.

Now, when you do the two-stage least squares regression, if there isn't any endogeneity, your results should be the same. And so there's unusually -- economists will think there's no harm in doing a two-stage regression just to see if there's endogeneity.

And when I did this, I wasn't -- I didn't know what to expect. I

did suspect that the structure of the regression was affected by endogeneity, but I didn't know whether at the -- doing a two-stage least squares would show that or not.

So when I did it, I -- that's where I could say that the opioid shipment variable, the significance -- the statistical significance of it went away, disappeared, when you -- when you -- when we did a two-stage least squares regression as opposed to the single-stage regression that Cutler did.

Q. In forming your opinions in this case, did you do any research or analysis as to whether shipments were targeted to areas with more cancer rates?

A. No.

Q. Before being retained in this case, had you ever done any regression analysis related to OUD?

A. No.

Q. I'm going to shift gears and talk about Dr. Alexander for a minute. And you can put the report down if it's helpful

for a second or the place we're going to go next is Section 8, which starts on page 39.

A. Okay.

Q. Do you consider yourself an expert on what strategies are needed to abate the opioid epidemic?

A. No.

Q. And are you qualified to design an abatement plan for the opioid epidemic?

A. No.

Q. You're not presenting an abatement plan for Montgomery County here, correct?

A. Correct.

Q. And you're not opining one way or the other on whether there is an opioid epidemic to abate, correct?

A. Correct.

Q. What's your understanding of the purpose of Dr. Alexander's report?

A. Well, I think Dr. Alexander's report does a comprehensive job of identifying all the different ways in which opioid use disorder could potentially affect public services. I'm not saying -- I

don't -- I'm not saying I agree with that. I think he does a very comprehensive job of just listing every single potential avenue in which a public service could be affected.

Q. So your interpretation is looking at how public services could be affected?

A. That seems to be -- to me, that seems to be his main approach. Or maybe not -- I'm probably not saying it right. Not just public services that could be affected, but abatement strategies that could be employed.

Q. And I should have asked this with respect to Dr. Cutler, too, so I'll go back.

All of your critiques of Dr. Cutler's report, other than the backup and the material for the regression that we talked about, are included in your report?

A. Yes.

Q. Okay. And are all of your critiques of Dr. Alexander's report included in your report?

A. Yes.

Q. And what issues did you have with Dr. Alexander's report?

A. Well, these were things that an economist would pick out. I understand that Dr. Alexander -- unlike Dr. Cutler, Dr. Alexander is not an economist -- a health economist or an economist, so he doesn't have the same kind of background I have.

And so I decided my approach to Dr. Alexander's report would be to tease out the economic aspects of some of the things that he mentions and some of the things he discusses and flag those things as, you know, potentially important limitations to where he's going with his report.

Q. What limitations or potentially important limitations did you identify to where you will attempt to be going?

A. Well, for example, one of the things that I pull out and I focus on is this idea of fixed versus variable cost. And I think it's important now -- it's not necessarily important in identifying abatement strategies, but it is important in identifying what part of that abatement

strategy is attributable to OUD versus other -- either other forms of substance use disorder or other social problems.

Q. Okay. And in paragraph 8.6 -- well, actually, before we go there, you didn't do any analysis of your own, correct, on the issue you just described?

A. That's correct.

Q. Okay.

A. Well, except to point out that I'm not sure I finished answering the other question sufficiently, but except to point out that there is a fixed versus variable problem to the extent that we -- and I do provide some data on that here in this report. Because I think it's important, like I said, in other words, there could be an abatement program that already exists, that's already serving a proportion of the population, and so there's really just two issues. One is the attribution of OUD to that program and then there's the fixed versus variable cost aspects of that problem.

Q. How would the fixed and variable costs analysis tell you anything

about attribution of OUD?

A. There's two different things. I didn't mean to imply they were related. There were two requirements that would need to be -- or not requirements, but there are two issues that would need to be investigated. But the fixed versus variable cost issue is that a lot of these programs need to expend a significant amount of subcosts or fixed costs to get, quote/unquote, up and running.

And when they're up and running, the volume of patients that are treated and in some cases even the types of patients that are treated -- or I shouldn't say treated. Served is probably a better word because a lot of these are problems and things like that that are serving individuals. So I probably shouldn't say treating patients.

But a program or a -- or a strategy might be able to serve more individuals without incurring much in the way of additional costs. That would be a service that has a relatively high fixed cost

component to it.

Q. Okay. Would the extent to which additional costs are incurred, how does that tell you whether or not the program is needed as part of an abatement strategy?

A. Well, indirectly, it does, because if a program already exists and it's already serving some proportion of the population in some way, we -- whether -- the ability of the program to serve additional individuals is an important question. Whether -- if the program can serve additional individuals without incurring an additional cost, then that's an important thing to know.

Q. So if a different expert is offering an opinion about the costs of the abatement plan, does that affect your opinions here?

A. I'm sorry, can you repeat that?

Q. If a different expert is offering costs -- or opinions about costs of the abatement plan, does that affect your opinions here?

A. No, because I -- my comments on

the Alexander report that we're talking about now are not -- they're not -- I'm not focusing necessarily on the levels of costs. I don't think Dr. Alexander does either, so I'm just pointing out more sort of important economic, conceptual things.

Q. Okay. And is it your opinion that an abatement expert has to proceed from an economic, conceptual perspective?

A. I think that an economist -- or specifically a health economist like myself is the most qualified to render an opinion on abatement costs. Again, that's not happening in this report or in the reports of Mr. -- or of Dr. Cutler or Dr. Alexander. But an economist's approach is important -- I think a health's economist approach is important because the -- you know, the other approach would be an accounting kind of approach, and an accounting approach is difficult to -- as I -- I think the things I pointed out before. It's difficult to attribute aspects of operations to one thing or another.

Q. Okay. And you didn't do any specific analysis of, for example, criminal

justice costs in Montgomery County, correct?

A. Correct.

Q. And you didn't do any analysis at all of costs incurred in Montgomery County, correct?

A. Correct.

Q. And I guess my question is, isn't it sort of an apples to oranges thing where if Dr. Alexander is a pharmacoepidemiologist and you're opining on entirely different subject area?

A. Well, and that's why my comments on Dr. Alexander's report I think are fairly limited. I read it and provided some sort of, I guess, top-line opinions on some of the material he's included, but I agree that I think his objective in that report appears to be a little bit different than mine. I think Cutler's maybe aligns a little bit better than Alexander's.

Q. And I'm going to go to page 42, paragraph 8.6 at the bottom there. You start out, "Many of the services Alexander deems essential for abating the alleged costs of OUD represent activities that could have been

employed by the plaintiffs to potentially identify OUD earlier."

Correct?

A. Correct.

Q. And what services are you referencing there?

A. I think this is generally -- you know, for example, Montgomery County's own employees, they're a self-insured county in terms of health coverage. It means they have access to data on medical -- pretty much full medical care claims data for other employees to be identified, of course, but they would have had the ability to look at patterns, at least among their own employees. I know that's just a subsection of Montgomery County population, but they would have had that ability.

They also could have worked with the state Medicaid program. Medicaid program has full claims data, much more comprehensive than Montgomery County's own self-insured data, in the sense that it's a truly population-level analysis -- or population-level data for the state of Ohio.

Those data could have been used by Montgomery County to monitor -- to identify OUD attributable or OUD cases earlier on and patterns in those cases and things like that.

Q. And I've got a few questions there.

When you say "worked with state Medicaid," what do you mean worked with state Medicaid?

A. Well, the County can obtain data from the state Medicaid program. This is not uncommon. In fact, even a health economist can sometimes obtain state Medicaid program data. So the County could have gone to the state Medicaid program and said, we would like to see data on our county. Or just data more generally about areas around the state that have changes in OUD cases, and they could have used those data to identify potential problems earlier.

Q. And can anyone go to the Medicaid program that requests that?

A. No. It is not something that's widely available. Some states don't make it

available at all. I assume that most states would make it -- sort of make it available to itself. Montgomery County being part of the state of Ohio, I would assume that they would have an avenue through which to access those data.

Q. Montgomery County is a separate entity from the State of Ohio, correct?

A. Correct.

Q. So did you check if Montgomery County has access to state Medicaid data?

A. I attempted to, but I wasn't able to determine whether they did or not.

Q. Okay. And when you say "identify OUD earlier," did you -- let me ask you this.

You didn't do any research into efforts by Montgomery County to abate the opioid epidemic, correct?

A. Correct.

Q. You didn't do any research into use of data by Montgomery County, correct?

A. Correct.

Q. And you don't know whether or to what extent Montgomery County did use data

to identify OUD, correct?

A. That's correct, but I also point out those last three questions you asked me would have been out of scope of the -- of the objectives of my report.

Q. I'm just asking about your opinion here. You're saying it could have done something earlier.

What's the basis for saying that they could have identified OUD earlier?

A. Well, I think it goes back -- it does tie in with my discussion of contributing factors and potentially responsible parties. Because I recall from that discussion I identify payors as being in that group.

Here I'm saying Montgomery County is itself a payor, so that's one way in which -- so all of that discussion prior about payors would apply here, specifically to Montgomery County.

And the discussion of payors also applies to the state Medicaid program.

Now, I don't know for a fact that a county in Iowa {sic} -- I'm sorry, in

Ohio has rights to obtain state Medicaid data, but I would be surprised if they didn't. So I'm putting them -- I'm lumping those things together here.

Q. And to opine that the County should have done something earlier, don't you need to know what the County did?

A. Well, again, I'm commenting -- this is just in the form of a comment on Dr. Alexander's report. I didn't look to see where Montgomery County did anything like this in the past.

Q. I understand it's in the context of commenting on Dr. Alexander, but just how do you critique Montgomery County for not doing something earlier without knowing what they did?

MR. BOONE: Object to form.

THE WITNESS: Well, the way I'm saying it here is that they could have done that. If indeed they did do it, well, then I think that's good. So I'm not necessarily saying they didn't do it. I'm just saying they would have had the ability to do it.

QUESTIONS BY MS. SALTZBURG:

Q. Okay. And Montgomery County government does not have unlimited resources, correct?

A. Correct.

Q. What Montgomery County can do -- well, let's see. Let me ask you. Did you consider any resource constraints in forming your opinions about what the county should have done?

A. No.

Q. Okay. And then you opined county-level data is less useful than, say, the larger, more national data that you talked about in other contexts, correct?

A. Well, my comment there is that the county-level data would only be a thousand individuals as opposed to, you know, a million or hundreds of thousands.

Q. Okay. And it would be limited to county employees, correct?

A. Correct.

Q. And you're saying that they could have identified OUD.

What are you saying they should

have done then differently?

A. Well, again, I'm not. I'm saying they could have identified patterns of OUD. I'm not suggesting specific actions that they could have taken, but generally more information is better than less information. So I would think that there might have been something they could do, perhaps maybe in terms of coordination of services across the county.

Q. Have you ever heard of the COAT?

A. I'm sorry, say that again.

Q. Are you familiar with the acronym COAT?

A. I -- maybe. What does that acronym stand for?

Q. Well, I'm asking you.

A. I don't know.

Q. Okay. Do you know what the Community Overdose Action Team is?

A. No.

Q. All right. And you say you got the impression from Dr. Alexander's report that he was attempting to entirely eliminate

all occurrence of OUD.

Am I understanding that correctly?

A. I'm sorry, say that again.

Q. Sure. So let's look at paragraph 8.7 on page 43.

And you say Alexander implies that full abatement of OUD should be the goal.

Correct?

A. Correct.

Q. He doesn't do that in his report, right?

A. I think he says it directly. He doesn't say it exactly like that, but my impression from reading his report is, you know, in various places he implies that.

Q. And so when you say "full abatement," what do you mean by full abatement?

A. Well, eliminating OUD completely.

Q. Okay. And it's the -- if the strategies are not designed to -- I guess let me ask you this.

If it's not to eliminate OUD to zero but to substantially reduce OUD, would that change your opinion?

A. Well, that -- that is -- that's kind of what I'm saying here, is that the -- that in virtually all aspects, if not all aspects, of public health, safety-type issues, the goal is never full abatement. It's always some level of acceptable -- or some level of externality that is acceptable.

Q. I want to go backwards to paragraph 8.4 of your report, which is page 41.

MR. BOONE: Counsel, when you get to a stopping point, let's take a quick break.

MS. SALTZBURG: Yes. I am pretty much wrapping up, Dr. Alexander {sic}. Do you want to go a few more minutes?

MR. BOONE: Sounds good.

QUESTIONS BY MS. SALTZBURG:

Q. Okay. So we spent a lot of time today talking about pharmacies, and you opined that you don't have an opinion about

whether pharmacies are filling illegitimate prescriptions or anything like that.

Correct?

A. Correct.

Q. Okay. So I want to understand paragraph 8.4 at the bottom of page 41.

In the middle of it, you have a sentence that starts out, "In other words, insofar as pharmacies have done their part in further limiting supply of prescription opioids, then they cannot then also be held liable for the subsequent increasing demand for illicit opioids."

Correct?

A. Correct.

Q. Okay. And what's the basis for your opinion that pharmacies have done their part in limiting supply?

A. Well, I think everyone who's been involved in any aspect of opioids has -- has -- and this is a point I attempted to make earlier in the report. I think in Section 2. All entities have attempted to change the way that they approach opioids and to be more vigilant, I think that's true of

all the potentially responsible parties that I identified.

Q. And you didn't identify pharmacies as a potentially responsible party?

A. No.

Q. Okay. So what have pharmacies done that you're opining affected supply?

A. Well, for example, the prescription drug monitoring programs, the pharmacies' interactions with those kinds of programs is an example of that.

Q. And are there any others?

A. Not that I'm aware of.

Q. Okay. And you didn't look at any of the information regarding diversion control at Kroger, correct?

A. Correct.

MR. BOONE: Object to form.

Do you mean diversion?

MS. SALTZBURG: Diversion.

QUESTIONS BY MS. SALTZBURG:

Q. Do you know what Kroger's policy and procedures are with respect to PDMP checking?

A. No.
Q. And here are you opining that pharmacies do affect supply?
A. Well, I'm opining that the collective effect of -- on the part of literally everyone involved in this have affected a decrease in opioid supply starting in -- prescription supply starting in 2012. It's difficult to attribute specifically portions of that to -- the actions of various entities, but everyone who -- all entities who have been involved in any way in this have contributed to some extent to that change.
Q. Okay. And are any sources that you're relying on for your opinion that pharmacies have done their part cited in the report?
A. No.
Q. Okay. What other sources are there?
A. I'm sorry, I think I misunderstood your question then.
Could you say it again?
Q. Sure.

What materials did you rely on as the basis for your conclusion that pharmacies have done their part?

A. Again, this is just a general comment that all entities have done their part. And again, in the context of this -- in the context of this discussion, it's -- it specifically having to do with this idea that if -- as the supply of prescription opioids has decreased, the supply of illicit opioids has increased, and so that's an important distinction to make in terms of that shifting of sources of supply.

Q. Okay. Are there any specific sources that you're relying upon for opining that pharmacies have done their part?

A. No specific sources identified here.

MS. SALTZBURG: Okay. Let's go on a break.

(Off the record at 3:33 p.m.)

QUESTIONS BY MS. SALTZBURG:

Q. So, Dr. Schneider, I would like to go to Section 6 of the report on implications. It starts on page 31.

A. Okay.
Q. Okay. And so you're opining here that there are implications for opioid litigation generally and Montgomery County specifically, correct?
A. Correct.
Q. And are those implications different in any way?
A. Do you mean between Montgomery County and the general?
Q. Yes.
A. A little bit different. There's some aspects of Montgomery County that I highlight in this -- in this section that not necessarily apply to other jurisdictions.
Q. Let's go through those then.
I guess before I do that, same page, paragraph 6.2. You say, "The State of Ohio and Montgomery County are subject to all factors that affect the entire country."
Correct?
A. Correct.
Q. And what do you mean there?
A. Well, in other words, a lot of

the intervening factors I identified are national factors of FDA, CDC, DEA, factors that don't distinguish or do things differently by county or by state. That's what I mean by that.

Q. Okay. So as part of the nation, Montgomery County would be subject to all of the national factors?

A. Correct.

Q. And that's the seven factors that we've talked about in part 2, correct?

A. Correct.

Q. So based on that, would you not expect to see significant variation in shipments to Montgomery County and other parts of the country?

A. Well, we might. So, for example, the discussion about medical need and the different health care indicators in Montgomery County might suggest a greater medical need in Montgomery County. It's a point I've made in a couple of different places here today. So that's one aspect.

Q. Okay. Let's talk about medical need.

You address that in 6.4 on page 32, correct?

A. Correct.

Q. And are you relying on anything other than sources cited in that paragraph?

A. No.

Q. And we talked a little bit about smoking.

Are you opining that the percentage of adults who are obese is a driver of the medical need for opioids?

A. Yes.

Q. Okay. And are you aware of any studies on that?

A. Yes, there are. They're not necessarily cited -- they're not cited here, but there's a large literature on metabolic disorders like obesity and to the extent they contribute to other issues. I mean, obesity itself generally doesn't require -- directly require pain management, but a lot of the secondary effects associated with obesity and metabolic disorders do require pain management.

Q. Okay. Is it your opinion that

the percentage of adults who are physically active is a director of a clinical need for opioids?

A. It can be. That would be correlated with obesity and other types of metabolic disorders, potentially diabetes and things like that, which, again, would be -- would have -- would be associated with secondary factors that would require pain management.

Q. And do you have a sense of what percentage of opioid prescriptions in Montgomery County are for cancer patients?

A. No, I don't.

Q. And I think you opined that opioid prescriptions in Montgomery County began to decline earlier than the national average, correct?

A. Slightly earlier, yes.

Q. Do you have an opinion on why that is?

A. No, I'm not sure why that is.

Q. And going through the factors that you're saying might be different, on page 33 you have physicians in 6.5, correct?

A. Correct.
Q. What's different about physicians in Montgomery County?
A. Well, generally, not much is the short answer to that. I think Montgomery County appears to be, when you do research on sort of high prescribing physicians and cases involving those types of physicians, some Montgomery County physicians pop up.
It doesn't necessarily -- that doesn't necessarily mean that the same thing wasn't happening in other parts of the country, but there is some clear evidence that it was happening in Montgomery County, whereas there are counties for which there is less evidence of it occurring.
Q. Okay. And were there more pill mills in Montgomery County?
A. Well, kind of the same answer. We don't know the number of pill mills -- how the number of pill mills in Montgomery County compares to the number of pill mills in other counties. You know, we would have to control for population when we did something like that, if we were to do something like that.

Because there isn't a good common data set on pill mills.

Q. Okay. And I don't know if we talked about your general opinion nationally on why physicians would be what you would call responsible parties.

Why is that?

A. Why physicians would be a responsible party?

Q. Yes.

A. Well, I think they're the -- one of the most responsible parties. I don't differentiate them that way, but if I did, I would put them close to the top of the list.

Physicians are responsible for making decisions regarding medical need, they're responsible for making decisions regarding treatment strategies, and they're responsible for understanding what's going on with the patient sitting in front of them. So they're the ones who are in the best position to evaluate whether an individual has a medical need for pain management, and more specifically, opioid pain management.

Q. Okay. And for your purposes of

your opinion here, are you saying all physicians in Montgomery County are responsible or are you identifying certain physicians?

A. I'm doing neither of this. I'm saying that physicians are clearly a responsible party by virtue of their position and certainly by virtue of the fact that they're the only ones writing prescriptions.

I'm not opining as to a percentage of Montgomery County physicians who have perhaps, you know, written more unnecessary prescriptions than others. I don't have an opinion about that. I don't think there's very good data on that.

Q. Okay. And are you -- for all of these responsible parties, are you opining about the extent to which they are responsible relative to others?

A. No.

Q. And you're not trying to apportion the amount of supply between them, correct?

A. That's correct.

Q. All right. I think you

mentioned some pill mills in your report. That's the next paragraph down here.

Who are the two prescribers that you mentioned in this paragraph?

A. Are you referring to Section 6.5 still?

Q. I'm on -- well, I'm on 6.6, government.

But that does raise a good question, so let me back up here. I'm going to withdraw that question.

Why are -- why is the government responsible for pill mills and not the pill mill itself?

A. Oh, I'm not suggesting that it's the government and not the pill mill itself. I'm suggesting both. So in Section 6.5, I'm identifying -- I have already identified in the report that physicians are a -- are a potentially responsible party and then here I'm saying, commenting, that in Montgomery County, there are known instances of pill mills.

In the next section under government, I'm saying that the -- this

relates to what we were discussing before regarding state Medicare -- I'm sorry, state Medicaid and also federal Medicare. Both of those programs were in a position and continue to be a position to identify pill mills and to potentially trigger some sort of corrective action either through claims denial or some other interconnectivity between government agencies. But they're as payors in a position to identify a pill mill. So in a claims data set, a pill mill would show up very, very distinctly.

Q. Okay. Have you ever looked at claims data for the purposes of identifying a pill mill at the county level?

A. No.

Q. Okay. And you didn't look at the claims data for Montgomery County here, correct?

A. Correct.

Q. Okay. And I think out of the responsible parties, you did say some were entities operated by a plaintiff, which would be this paragraph.

Which entities are you talking

about?

A. Can you point me to where --

Q. Sure. It's 6.1. So it's back a couple of pages. It's page 31.

A. Oh, I see it. Item Number 3 in 6.1.

Q. Uh-huh.

A. Yes, you're asking about the phrase, some of which are entities operated by the plaintiffs in this matter. That would be -- that would be their own -- their own programs, their own criminal justice system and the data collected through that, their own social and family assistance programs and the data collected through that.

And again, the extent to which the county is connected to the state Medicaid program as well.

Q. So basically what you discussed in the context of Dr. Alexander's report?

A. Correct.

Q. I will not ask you again.

Are you saying there's anything else that makes the County responsible?

A. No.

Q. Okay. And jumping back to 33, page 33, on physicians in paragraph 6.5.

You didn't name two pill mill prescribers. Do you remember who they were?

A. No, I don't.

MR. BOONE: Object to form.

THE WITNESS: I don't. I'm looking at the footnotes to see if they're -- if the name appears there, but it doesn't. So I don't know offhand.

QUESTIONS BY MS. SALTZBURG:

Q. Okay. And is all of the information that you considered related to pill mills in Montgomery County cited in these paragraphs 6.5 and 6.6?

A. Yes.

Q. Okay. And for the paragraph 6.6, you write in that first sentence, "In the first physician example above, all the opioid units distributed in that Montgomery pill mill were paid for by Medicare or Ohio Medicaid."

Correct?

A. Correct.

Q. So is it your opinion that all of the, I guess -- let me strike that.

Is it your opinion that that pill mill was only serving Medicare and Medicaid patients?

A. I believe that's the case, yes.

Q. Would it alter your opinion if that were not the case?

A. No, it wouldn't. Because it doesn't -- all part of that sentence is not critical to the point that I'm making.

Q. So it's not really relevant to what extent they're Medicare, Medicare or cash payments?

A. Correct. If it's a larger proportion, then it would be potentially more visible and -- in claims data, but it's not -- it doesn't have to be all. It doesn't have to be 100 percent.

Q. Okay. And do you know if their prescriptions were filled at Kroger pharmacies?

A. I do not know that.

Q. Would it affect your opinions if they were?

A. No.

Q. Okay. Is there any difference in your opinion about quality -- excuse me, quality ratings nationally in Montgomery County?

A. No. The point I make here in 6.7 is fairly general and would apply to any quality rating system and any state Medicaid program.

Q. Okay. And are all of the materials you considered related to quality ratings with respect to Montgomery County cited in this paragraph 6.7?

A. Yes.

Q. Okay. And then going on to 6.8, manufacturers and distributors.

Is there any difference in the role of manufacturers and distributors nationally and in Montgomery County?

A. Not that I'm aware of.

Q. Okay. And are all of the sources you cite you considered for purposes of manufacturers and distributors in Montgomery County cited in that paragraph 6.8?

A. Yes.
Q. Okay. Going on to macroeconomic affairs, on the next page, which is page 34.
A. Okay.
Q. So you appeared to be opining there that there's a correlation between unemployment and OUD rates from the mid-'90s to 2010.
Is that fair?
A. Yes.
Q. Okay. And in your opinion, is the correlation enough to establish causation?
A. No.
Q. And did you do any independent analysis of unemployment and opioid prescriptions in Montgomery County?
A. No, I did not.
Q. Okay. And you don't cite any study finding a causal link here, correct?
A. Correct.
Q. And what's your opinion with respect to drug trafficking in Montgomery County?

A. If I -- if I may just go back to -- one thing I would add to the last question I just -- of yours that I just answered, is that I do earlier cite a number of studies that identified a correlation between macroeconomic factors and substance use disorder and opioid use disorder. So I just -- I think it's important just to footnote that because I think -- I believe your question was directly pertaining to Montgomery County, but I just wanted to add that.

Q. Understood. Okay. And it was.

And my question is, the two things you say are correlated in that paragraph, you're not aware of any studies on that information, correct? That might be poorly worded.

A. Not specific to Montgomery County, correct.

Q. Okay. Not specific to unemployment rates and OUD rates in Montgomery County?

A. Correct.

Q. Okay. That may be a better way

of asking that. Thank you.

So let's go on to drug trafficking then. What's your opinion about drug trafficking in Montgomery County? Is it different than national?

A. It's not necessarily different than national, but that Montgomery County is one of the 33 high intensity drug trafficking areas identified by the DEA or DOJ. I'm not sure who. One of those agencies. So given that they are one of the 33 nationwide would suggest and of course the data further suggests that illicit opioids are a bigger problem in Montgomery County than many other counties.

Q. Okay. And are all of the sources that you considered for your opinions about drug trafficking specific to Montgomery County cited in this paragraph 6.10?

A. Yes, I have some additional citations on drug trafficking generally in other parts of the report.

Q. Okay. And I think you acknowledge it there, that there's limited capacity at the local, state and federal

level to address drug trafficking, correct?

A. Yes. And the point of making that point is that that explains the rise in the introduction and utilization of illicit opioids.

Q. Okay. And in forming your opinions on the implications for Montgomery County, did you use any empirical techniques?

A. Regarding drug trafficking?

Q. Regarding the implications that are specific to Montgomery County in this Section 6.

A. Okay. And so I'm sorry. Ask the question again.

Q. Sure.

In forming your opinions on the implications specific to Montgomery County, did you do any sort of empirical analysis?

A. Not different than what is presented here in Section 6.

Q. Sorry, I don't understand.

A. Well, empirical analysis could include, for example, the data that I show for the health indicators for Montgomery County. It depends what you mean by

empirical.

Q. Yeah, let me ask you a better way.

Did you do anything, like a regression, anything like that, as opposed to looking at the public sources that are cited?

A. No.

Q. Okay. You had started to talk a little bit about transition from prescription opioids to illicit opioids earlier, correct?

A. Correct.

Q. Okay. I want to go back to that briefly. And that is in the next section. I think it relates to your critique of Dr. Cutler. It's page 37, paragraph 7.12.

Okay. And you acknowledge there at the bottom of that page, "it is possible that some illicit opioid use is preceded by use of diverted prescription opioids."

Correct?

A. Correct.

Q. Okay. And have you done any analysis to seek to quantify that amount?

A. No.

Q. Okay. And I think you also opine in that paragraph that you don't think it's well-established that illicit opioid abuse is due to earlier prescription opioid abuse, correct?

A. Correct. And that's the reason why this sentence says that some illicit opioid abuse is preceded by. So there's some evidence that there's some -- that some illicit opioid abuse is preceded by diverted prescription opioid use, but the -- my opinion is that the literature -- again, we were just talking about associations versus causations. The literature -- some literature has found an association along those lines, but my read of the literature is that it hasn't proven a causal link between the two.

Q. Okay. And what sources are you relying on for that opinion?

A. Well, those are some sources that I'm not sure are cited in this report. I do think that Dr. Cutler cites them in his report.

Q. Okay. And I couldn't tell you. There was one part of your report where it wasn't clear to me that you were suggesting that prescription opioid abuse was due to illicit opioid abuse. Are you offering that opinion?

A. No, I'm not. So but just to clarify -- let me clarify. The -- it's important to distinguish the fact that opioid use disorder, which is the externality that we're talking about today, opioid use disorder is attributable to illicit opioids and to some degree diverted prescription opioids.

So what's happening in recent years is that it is increasingly attributable to illicit opioids. So for the last, let's say, five years or more, illicit opioids is the dominant type of opioid found in OUD cases and OUD mortality.

But the -- but they're both -- but there is some proportion of diverted opioids not sourced directly from the health care system that are -- that are contributing to OUD.

(Schneider Exhibit 4 marked for identification.)

QUESTIONS BY MS. SALTZBURG:

Q. Okay. With that, I'm ready to put this report away and move on to your CV, which is Exhibit 4, if you still have your box or folder.

A. Opening Exhibit 4. Okay.

Q. Okay. Is this your CV?

A. Yes.

Q. Is it the current version?

A. It's reasonably current, yes.

Q. Do you have a newer one?

A. I might. I don't know if there's -- if I've added any publications and that kind of thing to this. I may have added an expert case or two as well.

Q. Okay. If you do a newer version, could we have a copy?

A. Yes.

Q. Okay. And if you update it before trial, could you also provide a copy?

A. Yes.

Q. And do you have any new publications that you anticipate coming out

that aren't on the CV yet that are relevant to this case?

A. Oh, relevant to this case, no.

Q. Is there anything in the updates that you're referencing earlier that has to do with opioids or issues relevant to this case?

A. No.

Q. Okay. And do you use the same CV for testifying and non-testifying work?

A. Yes.

Q. And did you prepare the CV yourself?

A. I prepare it myself. It's -- I'm not always the one updating it.

Q. Is somebody else updating this one?

A. Well, I typically have my -- if I have a new publication come out or a new case, I'll typically have my administrative assistant -- I'll send them -- I'll send them the information, they'll add it to the CV.

Q. Okay.

A. But that doesn't occur on a daily basis. At any given point in time,

there's often one or two things missing from the CV.

Q. Okay. And I think in your New Mexico deposition you discussed a lot of your expert work and your publications, correct?

A. I recall that, yes.

Q. Are there any that you think are relevant here that you didn't discuss in New Mexico?

A. That I didn't -- well, I don't remember exactly what I discussed in the New Mexico deposition, but I would say that that -- that that would have -- I don't remember that discussion being quite lengthy, so it probably would have covered most of the relevant materials.

Q. Okay. I mean, I know it's hard to remember. Let me ask it this way.

Is there any work that you've done before April 2022 that is relevant to this case that wouldn't have been relevant in New Mexico?

A. No.

Q. Okay. And you mentioned a case that you had testified in about causal

factors earlier in San Francisco.

Do you remember that?

A. Yes.

Q. And I was looking during the break. I could not find it on here.

Which of the cases were you --

A. Oh, okay. I'm sorry for interrupting.

My CV shows the most recent five years --

Q. Okay.

A. -- testimony. That testimony was probably maybe ten -- actually maybe more than ten years ago.

Q. Okay. Do you remember who the parties were other than San Francisco?

A. The other party was Philip Morris.

Q. Okay. And do any of the other cases -- and do any of the -- I guess let me ask you this.

Do any of the cases in this list involve trial testimony where you offered opinions about potentially responsible parties?

A. Please give me a minute to review the list.

Q. Take all the time you need.

A. Item Number 12. I'll just list them as I encounter them. Item Number 12, Maryland Cares versus Evolve, Incorporated. Not opioid-related, but sort of attributable cost of potentially responsible party.

Q. Okay.

A. I think on this list that is the only one.

Q. Okay. Are there any earlier ones other than Philip Morris and San Francisco that you can think of?

A. Yes, there are.

Q. And for clarity, just trial, not if you did a deposition. I'm not asking you to remember that.

A. Oh, okay. Yeah, well, that's what I was going to say. I think I did a deposition in cases involving attributable costs and potentially responsible parties. I don't recall -- they're not on this list because they predate this list.

Q. Okay.

A. Yeah.

Q. And turning to the peer-reviewed publications, do any of these involve sort of the CERCLA analogy that we walked through earlier?

A. None of these would explicitly cite to that. However, there are some publications -- the publications I've done involving tobacco product waste are -- were sort of environmental economics-type issues, and one of those is a WHO bulletin publication that's not out yet, so it's not on this list. And then there are sort of a couple of others which I could -- one would be -- indirectly number 8, which is the publication, the International Journal of Environmental Research and Public Health.

Again, indirectly, Item Number 27, which is the journal -- something published in Tobacco Control.

That's probably it.

Q. I think I just have a few last questions for you. You can put the CV away.

A. Okay. And let me just put an end to that. I got through the list. I

don't think there's anything else that would --

Q. Oh, I'm sorry. I didn't mean to --

A. No, no, that's fine. I understand.

Q. All right. The only thing I wanted to ask you about. I do want to go back to that general section on potentially responsible parties, which is Section 4. I was hoping we can sort of cover it through the Montgomery County discussion.

And I have a question about page 20. And it's paragraph 4.8 at the bottom there.

And it looks to me like you're holding the CDC responsible, you know, for its role in managing epidemics.

Is that right?

A. Correct.

Q. Okay. But I understood you to be saying that this responsibility is for supply, not for, you know, OUD or the epidemics, correct?

A. Well, correct. These are

factors that would affect supply, so I would -- my argument here is that the CDC through its inactions didn't fulfill its obligations to identify the growing number of cases of OUD and the sources of OUD.

Q. And how does that impact supply?

A. Well, by not identifying OUD as a problem, it slowed any response to the supply of OUD -- I'm sorry, to the supply of prescription opioids, you know, through various programs and changes in clinical practice guidelines and all of that, all of those things we already discussed.

Q. Okay. So is it fair to say kind of as a general rule you're applying that slowness in putting steps in place to monitor impacts supply?

A. Generally, yes, in the -- in situations where entities are positioned to be able to do that.

Q. Okay. And I want to ask a couple of questions. You can put that away.

Is there any additional information you feel would strengthen or

weaken your opinions in this case?

A. No, not that I can think of offhand.

Q. Okay. And any information that we didn't already discuss that would influence or change your opinions?

A. Again, not that I can think of offhand.

MS. SALTZBURG: All right. That is all of the questions I have. Thank you for your time.

THE WITNESS: Thank you.

MR. BOONE: I'm going to look at John since he's in the room with me, so forgive me for not facing that direction.

MS. SALTZBURG: Understood.

CROSS-EXAMINATION

QUESTIONS BY MR. BOONE:

Q. So, John, I want to walk back to a moment earlier you were talking about being an expert in abatement.

So you understand that in Track 7 in Montgomery County the Court has bifurcated the liability section from the

abatement phase, correct?

A. That's my understanding, yes.

Q. So sitting here today with the Track 7 report, that is a report that is not for the abatement phase, not at least as of yet, correct?

A. Correct.

Q. Now, in New Mexico, that was a different proposition. The report you offered in New Mexico did get into abatement, correct?

A. That's correct, yes.

Q. So you felt that you were appropriate to serve as an expert in the abatement phase in New Mexico?

A. Yes, specifically I think -- okay. I think the -- in my -- my opinion is that I'm an expert on calculating the costs of abatement or the costs attributable to abatement, as I did in New Mexico. So that's what I say -- so I'm -- what I'm not an expert on are the types of programs that work better or not as good in terms of actually -- in terms of actual abatement.

So some -- for example, some of

the things that Dr. Alexander was opining on in terms of the specifics of the functioning of a program, that's not something I'm an expert on.

Q. Okay. And so you would feel comfortable serving in the abatement phase as an expert in Montgomery County, if so asked?

A. Yes.

Q. Okay. Now, the PRP, the primary responsible parties, that you've identified in Figure 2-2 --

A. Okay. You said primary responsible parties. I assume you meant potential responsible parties.

Q. Let's try again.

In Figure 4-1, you identify potential responsible parties, correct?

A. Correct.

Q. Now, I noticed that there has been no effort in this report for allocation -- by allocation I mean assigning a percentage, perhaps -- with respect to one another.

Is that correct?

A. Correct.

Q. Is that an effort that is more appropriate for the abatement phase of the report?

A. Yes, I would undertake that in an abatement exercise.

Q. All right. Now, I know that this report here is strictly for causation.

In the report that you've proffered thus far for Track 7 is strictly a report for causation, liability, correct?

A. Correct.

Q. Is it fair to say that the effort and information conducted reflected in this report would inform your efforts in crafting a report for an abatement phase at the trial?

A. Correct. And that's what I was trying to communicate when we were talking about externalities and we were talking about the steps in assessing an externality.

MR. BOONE: Okay. Can we just take a quick moment and I'll see if I have additional questions? Okay? So let's go off the record for about ten minutes.

MS. SALTZBURG: Sure.

(Off the record at 4:31 p.m.)

REDIRECT EXAMINATION

QUESTIONS BY MS. SALTZBURG:

Q. Dr. Schneider, when Mr. Boone was asking about the causation phase, are you still understanding that to mean you would be offering opinions about the causes of opioid supply, not causes of the opioid epidemic?

A. Yes, just to clarify, causes of the increase in opioid supply.

Q. Okay. And I think you mentioned the PRPs on this Figure 4.1 that he was referencing.

Many of them, the majority of these are PRPs that you've opined have a role in driving the supply that you've characterized as legitimate, correct?

A. Well, just explain what you mean by legitimate.

Q. Sure.

We discussed, you know, the purpose of the PRPs. You're assigning responsibility for supply, not for OUD, correct?

A. That's correct, yeah, for supply -- well, for the increase in supply, yes.

Q. Okay. And so you were asked questions about would you be testifying that -- or might you be testifying that all of these PRPs should be apportioned harm in the abatement phase, correct?

MR. BOONE: Objection to form.

THE WITNESS: Yeah, I'm sorry, maybe you could just say that again, at least. You don't have to rephrase it.

QUESTIONS BY MS. SALTZBURG:

Q. Maybe I didn't understand.

Were you telling Mr. Boone that if there were an abatement phase in this case, one of the things that you would be doing is allocating abatement costs to the -- all of the PRPs in this figure?

A. Well, so, yes, but just with the caveat that I would -- I would -- if I were to undertake an abatement cost analysis, I would reconsider again the -- these PRPs. I would -- yes, I would think the way this

analysis was structured was in the context of externalities, and as I described before, one of the steps is identifying the PRPs.

Q. Okay. And so you would be assigning abatement costs to PRPs that you have described as having only an indirect role in supply, correct?

A. Correct.

Q. Let me -- okay. And PRPs that you don't necessarily view as responsible for causing OUD, correct?

A. Well, let me clarify.

So what I'm doing in this section and this figure is identifying PRPs that are -- that are associated with an increase in prescription opioids, but not necessarily a -- directly responsible for OUD. If that's what you're asking, that's correct.

Q. Okay. So that's a good way to put it. You would be assigning abatement costs regardless of whether there's any direct responsibility for OUD?

A. Correct.

MS. SALTZBURG: Okay. That's

all the questions I have.

MR. BOONE: One more follow-up.

RECROSS-EXAMINATION

QUESTIONS BY MR. BOONE:

Q. Now, I think the question that was proffered by counsel included the word opioid epidemic, the words opioid epidemic. And I think this was what the answer that you gave was addressing, but I just wanted to clarify, that your report does not opine whether there is or is not an opioid epidemic, correct?

A. Correct, yeah, I discuss that in my report.

Q. Sorry, you do discuss that in your report?

A. I discuss it in my report.

Q. What do you say about that?

A. I say it's not my opinion that it's an epidemic, although I acknowledge that others have called it that.

MR. BOONE: Okay. That's all I have.

MS. SALTZBURG: And I have nothing further.

MR. BOONE: Okay.

COURT REPORTER: Mr. Boone, I don't believe your firm has a standing order in this case, so I didn't know if you needed a copy of this.

MR. BOONE: Oh, yes, I will need an original and E-Tran. And we will read.

(Deposition concluded at 4:39 p.m.)

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CERTIFICATE

I, CARRIE A. CAMPBELL, Registered Diplomate Reporter, Certified Realtime Reporter and Certified Shorthand Reporter, do hereby certify that prior to the commencement of the examination, John Schneider, Ph.D., was duly sworn by me to testify to the truth, the whole truth and nothing but the truth.

I DO FURTHER CERTIFY that the foregoing is a verbatim transcript of the testimony as taken stenographically by and before me at the time, place and on the date hereinbefore set forth, to the best of my ability.

I DO FURTHER CERTIFY that I am neither a relative nor employee nor attorney nor counsel of any of the parties to this action, and that I am neither a relative nor employee of such attorney or counsel, and that I am not financially interested in the action.

Carrie A. Campbell

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ACKNOWLEDGMENT OF DEPONENT

I,_____, do hereby certify that I have read the foregoing pages and that the same is a correct transcription of the answers given by me to the questions therein propounded, except for the corrections or changes in form or substance, if any, noted in the attached Errata Sheet.

_____
John Schneider, Ph.D. DATE

Subscribed and sworn to before me this

_____ day of _____, 20 _____.

My commission expires: _____

Notary Public

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ERRATA

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LAWYER'S NOTES

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